

4-2023

## Cyberbullying: Senior Prospective Teachers' Coping Knowledge and Strategies

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### Recommended Citation

Arslan, Kürşat and Aydın, İnan (2023) "Cyberbullying: Senior Prospective Teachers' Coping Knowledge and Strategies," *Journal of Cybersecurity Education, Research and Practice*: Vol. 2023: No. 1, Article 7. Available at: <https://digitalcommons.kennesaw.edu/jcerp/vol2023/iss1/7>

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### Abstract

This study aimed to determine senior prospective teachers' coping knowledge and strategies for cyberbullying in terms of demographic variables. The sample consisted of 471 prospective teachers (324 female and 147 male) studying in the 4th grade in Dokuz Eylül University Buca Education Faculty in Izmir in the 2019-2020 academic year. It was a quantitative study using a causal-comparative research design to find out whether prospective teachers' coping knowledge differed by independent variables. The "Coping with Cyberbullying Scale" developed by Koç et al. (2016) was employed to discover prospective teachers' coping strategies for cyberbullying. A "Personal Information" form was also prepared to collect demographic information. The data were analyzed with SPSS 25.0 program. Since the dependent variables did not have a normal distribution, the differences between the variables with two groups were analyzed with the Mann-Whitney U test, and the variables with three or more groups were analyzed with the Kruskal-Wallis H test. The findings suggested that the prospective teachers' cyberbullying coping knowledge level was moderate. Other findings were discussed in the discussion section.

### Keywords

Cyberbullying, University Student, Knowledge, Strategies

# Cyberbullying: Senior Prospective Teachers' Coping Knowledge and Strategies

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**Abstract**—This study aimed to determine senior prospective teachers' coping knowledge and strategies for cyberbullying in terms of demographic variables. The sample consisted of 471 prospective teachers (324 female and 147 male) studying in the 4th grade in Dokuz Eylül University Buca Education Faculty in İzmir in the 2019-2020 academic year. It was a quantitative study using a causal-comparative research design to find out whether prospective teachers' coping knowledge differed by independent variables. The "Coping with Cyberbullying Scale" developed by Koç et al. (2016) was employed to discover prospective teachers' coping strategies for cyberbullying. A "Personal Information" form was also prepared to collect demographic information. The data were analyzed with SPSS program. Since the dependent variables did not have a normal distribution, the differences between the variables with two groups were analyzed with the Mann-Whitney U test, and the variables with three or more groups were analyzed with the Kruskal-Wallis H test. The findings suggested that the prospective teachers' cyberbullying coping knowledge level was moderate. Other findings were discussed in the discussion section

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## I. INTRODUCTION

In a world of technological developments and changes, everyday habits and technologies have also changed. In line with the needs in the last decades, the gradual pace of technological development has become much faster, and today the pace of progress sometimes cannot be followed. Despite its countless benefits for our lives, the harms of technology should not be ignored, one of which is cyberbullying. In this sense, Ayas and Horzum (2011) suggest that technology facilitates the lives of those who benefit from it, but it has potential harm when used for other than its intended purposes. The word "cyber" is defined as "connected with electronic communication networks, especially the internet" (Oxford Learner's Dictionaries, 2020). Accordingly, it can refer to bullying through internet environments, including computers and mobile phones.

The concept of cyberbullying initially used by the Canadian educator Belsey in the 2000s (Yaman et al., 2013, p. 324), is also referred to as virtual bullying in some sources. Bill Belsey (2020) defines cyberbullying on his webpage, <http://www.billbelsey.com>, as "the use of information and communication technologies to support deliberate, repeated, and hostile behavior by an individual or group, that is intended to harm others". In the literature, there are various definitions of cyberbullying. For example, Arıca (2011) defines cyberbullying as "any behavior that technically or relationally

harms an individual or a group, a private or legal entity by using information and communication technologies" (p.10). Aktepe (2013) describes it as "sending threat, offending and sexual messages by using online technologies" (p.35). In a study conducted by Ateş and Güler (2016), cyberbullying is described as "sending threatening, insulting and offensive messages" (p.401). Lastly, Akça and Saymer (2017) define cyberbullying as "a new type of violence characterized by intentionally distressing or disturbing behaviors" (p.12).

Along with the concept of cyberbullying, it is also important to define the concepts of "coping" and "strategy" for a better understanding of the content. In the Turkish Language Association Dictionary (TDK), "coping" has two definitions: "dealing with someone" and "dealing with something." "Dealing with someone" refers to "resolve an issue with someone as the way you can manage," while "dealing with something" is defined as "the capacity to do something" (TDK, 2020). On the other hand, the word "strategy" is of French origin, meaning "a plan aimed at achieving a particular goal" in the Oxford dictionary. Accordingly, a coping strategy for cyberbullying can be defined as achieving a goal within the framework of a plan and in the face of a problem related to cyberbullying.

In the literature, the studies on coping strategies for cyberbullying primarily focus on adolescents, and it is observed that adolescents have different reactions to cyberbullying, develop unique coping strategies, and have various help-seeking sources.

According to the study conducted by Patchin and Hinduja with adolescents in 2006, adolescents exposed to cyberbullying, as a coping strategy, preferred leaving the online environment, sharing it with a family member or an adult, or asking the bully to stop bullying. Other studies revealed that participants suggested solving a problem by talking to a cyberbully face to face (Aydın & Seferoğlu, 2020; Gökmen, 2019; Karaosmanoğlu, 2019; Özer, 2016) because cyber victims cannot express themselves or their problems by just writing, so should face the bully or communicate via voice communication tools (Parris et al., 2012).

According to the study conducted by Türkileri et al. (2013) on secondary and high school students, adolescents stated that parents, teachers, and authorities should provide training on this issue and enact laws and rules to stop cyberbullying.

In another study by Topçu and Erdur-Baker (2016) on adolescents, 24.5% of the participants were exposed to cyberbullying and 23.4% to traditional bullying. It was also concluded that 59.1% of those exposed to traditional bullying and 45.1% of those exposed to cyberbullying received help

after bullying, that girls demanded help more than boys, and that the primary help source was parents and friends. It was followed by the option of getting help from relatives apart from parents, friends, and siblings. The option of getting support from relatives preceded getting help from teachers and psychological counselors, which may be related to receiving technical support from relatives or cyberbullying occurring outside of school.

Similarly, in their studies, Türkileri (2012) and Turgut (2016) observed that children usually try to resolve their own cases of cyberbullying, and if they need help, they get support from their families and friends.

Özer (2016) conducted a study on 7th and 8th-grade secondary school students and found that when students were exposed to cyberbullying, they usually shared it with their friends and rarely preferred using coping strategies such as telling family members, teachers, school administrators, psychologists, and police. Karaosmanoğlu (2019) stated that those children tended to receive support from their friends rather than from parents and adults, and they shared less with teachers and school administrators. In a study by Akça and Sayımer (2017), children were reluctant to get help from school administrators, teachers, and families in coping with cyberbullying, which might result from children's fear of losing their technological tools and internet.

According to Gökmen's (2019) study on students' coping methods with cyberbullying, students had reasonable awareness levels, which was effective in dealing with cyberbullying. In another study by Metin (2017) on secondary school teachers, 91% of teachers were incapable of taking enough precautions against cyberbullying, although all teachers attempted to prevent cyberbullying.

According to the results of the studies in the literature, it was observed that the participants applied various strategies to cope with cyberbullying. These strategies are summarized below:

- Blocking messages/ hiding identities (Türkileri İnelöz & Uçanok, 2013; Özer, 2016; Gökmen, 2019; Karaosmanoğlu, 2019).
- Changing the e-mail address and phone number (Türkileri İnelöz & Uçanok, 2013; Özer, 2016).
- Changing the password (Özer, 2016; Metin, 2017; Dikmen & Tuncer, 2017).
- Leaving the Website or unsubscribing (Türkileri İnelöz & Uçanok, 2013; Metin, 2017; Patchin & Hinduja, 2006).
- Asking the bully to stop bullying (Özer, 2016; Gökmen, 2019; Aydın & Seferoğlu, 2020).
- Hiding personal information (Metin, 2017; Dikmen & Tuncer, 2017; Karaosmanoğlu, 2019; Gökmen, 2019).
- Getting support from family members and friends (Aydın and Seferoğlu, 2020).
- Getting support from the security forces (Gökmen, 2019; Aydın and Seferoğlu, 2020).
- Ignoring/not responding (Özer, 2016).

As seen in the literature mentioned above, studies mainly focus on adolescents. It is noteworthy that in case of a cyberbullying experience, adolescents are hesitant to ask for support from their families and teachers and prefer to get support from friends because of the fear of being deprived of technological tools (Akça & Sayımer, 2017). However, as age increases, the tendency to seek help against cyberbullying increases (Topçu & Erdur Baker, 2016). One of the critical points to be considered in light of the given findings is that students do not receive support from teachers about cyberbullying. When the studies on coping strategies with cyberbullying are examined, it is seen that most studies focus on students, there are a few studies involving working and prospective teachers, and no study measures the level of cyberbullying. There is also no study on prospective teachers from all branches focusing on their cyberbullying coping strategies. Therefore, this study contributes to the literature by providing a different dimension. Families and teachers should be well-informed about the issue to raise awareness and give students confidence and guidance in case of cyberbullying.

This study aimed to determine the general and variable-specific awareness of cyberbullying in prospective teachers from various departments in an education faculty and discussed the following problem statements:

1. What is the prospective teachers' knowledge level of coping with cyberbullying?
2. Which strategies do prospective teachers prefer to cope with cyberbullying?
3. Do prospective teachers' knowledge levels of coping with cyberbullying differ significantly according to their demographic characteristics?

## II. METHOD

### A. Research Model

The study tested whether knowledge level of coping strategies for cyberbullying as dependent variable differed according to demographic characteristics as the independent variables (gender, familiarity with cyberbullying, previous training on cyberbullying, daily internet use, having social media accounts, the number of social media accounts, hiding the real identity in a virtual environment, and parents' education level). Therefore, the causal-comparative research design was applied to test the differences between the groups. Causal-comparative research designs "aim to determine the causes and consequences of differences between groups without any intervention on conditions and participants." (Büyüköztürk et al., 2018, p.17).

### B. Study Group

The study group comprised 471 prospective teachers, 324 female (68.8%) and 147 male (31.2%), studying in the 4th grade at Dokuz Eylül University Buca Education Faculty in Izmir in the 2019-2020 academic year. The main reasons for choosing senior students were to determine the coping knowledge and strategies for cyberbullying of prospective teachers who were about to graduate from university and to include a sufficient number of participants at the same level. Other demographic information is presented in detail in the table below.

TABLE I. PARTICIPANTS DEMOGRAPHIC INFORMATION

Variable		N(Total)	%
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<b>Gender</b>	Female	324	68.8
	Male	147	31.2
<b>Familiarity with cyberbullying</b>	Yes	400	84.9
	No	71	15.1
<b>Previous training on cyberbullying</b>	Yes	21	4.5
	No	450	95.5
<b>Daily internet use</b>	0-2 hours	84	17.8
	3-4 hours	172	36.5
	5-6 hours	130	27.6
	7-8 hours	42	8.9
	More than 8 hours	43	9.1
<b>Having social media accounts</b>	Yes	443	94.1
	No	28	5.9
<b>The number of social media accounts</b>	0	28	5.9
	1-2	219	46.5
	3-4	166	35.2
	4 and more	58	12.3
<b>Hiding real identity in a virtual environment</b>	Yes	140	29.7
	No	331	70.3
<b>Mother's education level</b>	Illiterate	51	10.8
	Primary education	257	54.6
	High school	102	21.7
	University	61	13.0
<b>Father's education level</b>	Illiterate	24	5.1
	Primary education	204	43.3
	High school	132	28.0
	University	111	23.6

### C. Data Collection Tools

The data were collected using a "Personal Information Form" prepared by the researcher for demographic information and the "Coping with Cyberbullying Scale" developed by Koç et al. (2016) to determine participants' coping knowledge. The necessary permissions were obtained from the scale developer and Dokuz Eylül University Institute of Educational Sciences for data collection. The tool was administered to the senior prospective teachers studying at Dokuz Eylül University Buca Education Faculty. Detailed information about the scale and personal information form is given below.

#### 1) Personal Information

The following information about the independent variables was collected in this section.

- Gender
- Familiarity with cyberbullying
- Previous training on cyberbullying
- Daily internet use
- Having social media accounts
- The number of social media accounts
- Hiding the real identity in a virtual environment.

- Educational status of mother and father.

#### 2) Coping with Cyberbullying Scale

The scale was developed by Koç et al. (2016) and had 19 items and 4 factors. The 5-point Likert type scale has the options of "strongly disagree," "disagree," "undecided," "agree," and "strongly agree" and can be scored between 1 and 5 points, in which 1 is equal to "strongly disagree" and 5 to "strongly agree". The exploratory factor analysis revealed that the scale explained 54.29% of the total variance, and the item loadings ranged from 0.602 to 0.838. The confirmatory factor analysis results yielded the fit values of RMSEA=0.054, SRMR=0.067, GFI=0.91, AGFI=0.88, CFI=0.95, NFI=0.90 and NNFI=0.94. The lowest score that can be obtained from the scale is 19, and the highest score is 95. Those who score between 19-47 points has low levels of coping strategy, those who score between 48-64 has medium, and those who score between 65-95 has a high level of coping strategy. The scale has 4 factors: "increasing cognitive security and confidentiality" (7 items), "seeking help" (5 items), "avoidance and ignoring" (5 items), and "information searching" (2 items). "I notify the police" and "I delete incoming messages without reading them" are sample items of the scale. Cronbach's Alpha internal consistency coefficient, measured in "Cyber Bullying: A Research on University Students," was 0.64, explaining 59.24% of the total variance. Since the internal consistency coefficient was between 0.60 and 0.80, the scale can be considered reliable (Dikmen, 2015).

#### D. Data Collection Process

In this study, data were collected using scales. The necessary permissions were obtained from the scale developers. The study was carried out on senior prospective teachers at Dokuz Eylül University Buca Education Faculty in the 2019-2020 academic year. The Dokuz Eylül University Institute of Educational Sciences provided the necessary permissions for data collection. Especially to increase participation in the data collection process, the forms were distributed with the permission of the relevant faculty member after the midterm exams. The participants were informed about voluntary participation, anonymity, confidentiality, and the use of data only for scientific purposes. The researchers carried out the entire data collection process, and the data was collected in printed form. Participants were also informed that they could withdraw without giving a reason, request the study results from researchers, and submit their requests up to two months after the data collection.

#### E. Data Analysis

The study data were analyzed using the SPSS 25.0 program. Participants included in the analysis were 100% without any attrition. Descriptive statistics including arithmetic mean and standard deviation were also used to interpret the results. Since the data regarding two-option variables (i.e., gender, familiarity with cyberbullying, previous training on cyberbullying, and hiding real identity in a virtual environment) did not have a normal distribution, it was analyzed using the Mann-Whitney U test, one of the non-parametric tests. Since at least three-option variables, such as the number of social media accounts and daily internet use, did not show normal distribution, the data were analyzed with the Kruskal-Wallis H test, one of the non-parametric tests.

## III. FINDINGS

TABLE II. THE ANALYSIS OF PROSPECTIVE TEACHERS' LEVEL OF COPING STRATEGY FOR CYBERBULLYING ACCORDING TO SPECIFIC VARIABLES

Variables		n	$\bar{X}$	Sd	p
<i>Coping Level</i> <sup>a</sup>	General Coping Level	471	61.40	7.69	
<i>Gender</i> <sup>a</sup>	Female	324	62.91	6.82	.00*
	Male	147	58.06	8.43	
<i>Familiarity with cyberbullying</i> <sup>a</sup>	Yes	400	61.21	7.65	.15
	No	71	62.47	7.88	
<i>Previous training on cyberbullying</i> <sup>a</sup>	Yes	21	63.04	6.85	.22
	No	450	61.32	7.73	
<i>Daily internet use</i> <sup>b</sup>	0-2 hours	84	61.83	7.05	.86
	3-4 hours	172	61.87	7.67	
	5-6 hours	130	61.03	7.76	
	7-8 hours	42	60.59	7.59	
	8(+)	43	60.53	8.96	
<i>Having social media accounts</i> <sup>a</sup>	Yes	443	61.33	7.50	.86
	No	28	62.50	10.43	
<i>The number of social media accounts</i> <sup>b</sup>	0	28	62.50	10.43	.40
	1-2	219	61.94	7.82	
	3-4	166	60.98	6.84	
	4 (+)	58	60.03	7.93	
<i>Hiding real identity in a virtual environment</i> <sup>a</sup>	Yes	140	63.38	7.25	.00*
	No	331	60.56	7.73	
<i>Mother's education level</i> <sup>b</sup>	Illiterate	51	62.92	6.44	.43
	Primary education	257	61.31	7.99	
	High school	102	61.26	7.59	
	University	61	60.737	7.57	
<i>Father's educational level</i> <sup>b</sup>	Illiterate	24	63.50	8.44	.14
	Primary education	204	61.88	7.60	
	High school	132	60.60	8.26	
	University	111	61.00	6.91	

<sup>a</sup> Mann-Whitney U Testi, <sup>b</sup> Kruskal-Wallis H Testi, \* p<.05.

According to the mean values in Table 2, all the prospective teachers had a moderate level of coping strategy for cyberbullying ( $\bar{X}$ =61.40).

In terms of gender, both male and female participants had a moderate level of coping strategies ( $\bar{X}$ =48-64). The Mann-Whitney U test results showed that prospective teachers' knowledge of coping strategies for cyberbullying statistically differed by gender. In this sense, female participants ( $\bar{X}$ =62.91) had higher coping strategy knowledge scores than male participants ( $\bar{X}$ =58.06) ( $p<.05$ ).

Prospective teachers' knowledge of coping strategies for cyberbullying was moderate ( $48<\bar{X}<64$ ) according to the "familiarity with cyberbullying" variable, and the Mann-Whitney U test results indicated no statistically significant difference ( $p=.15$ ). The average scores of those who were familiar with cyberbullying were 61.21, while the average scores of those who were not familiar with cyberbullying were 62.47.

Prospective teachers' knowledge of coping strategies for cyberbullying was moderate ( $48<\bar{X}<64$ ) according to the

"daily internet use," and the Kruskal-Wallis H test results indicated no statistically significant difference ( $p=.86$ ). The lowest average scores were found in those using the internet for 8 hours and above daily ( $\bar{X}$ =60.53), and the highest average scores were in the group of the participants spending 3-4 hours on the internet ( $\bar{X}$ =61.87).

Prospective teachers' knowledge of coping strategies for cyberbullying was moderate ( $48<\bar{X}<64$ ) according to the "having social media accounts" variable, and the Mann-Whitney U test results revealed no statistically significant difference ( $p=.86$ ). The average scores of those who had a social media account were 61.33, and the average scores of those who did not have any account were 62.50.

Prospective teachers' knowledge of coping strategies was moderate ( $48<\bar{X}<64$ ) according to "the number of social media accounts," and the Kruskal-Wallis H test results indicated no statistically significant difference ( $p=.40$ ). The lowest average scores were found in those who had 4+ accounts ( $\bar{X}$ =60.03), and the highest average scores were in those who did not have any social media account ( $\bar{X}$ =62.50).

Prospective teachers' knowledge of coping strategies for cyberbullying was moderate ( $48<\bar{X}<64$ ) according to the "hiding real identity in a virtual environment" variable, and the Mann-Whitney U test results indicated a statistically significant difference. Accordingly, the participants who answered "Yes" ( $\bar{X}$ =63.38) had more knowledge of coping strategies than those answering "No" ( $\bar{X}$ =60.56).

Prospective teachers' knowledge of coping strategies for cyberbullying was moderate ( $48<\bar{X}<64$ ) according to the "mother's education level", and the Kruskal-Wallis H test results indicated no statistically significant difference ( $p=.43$ ). The lowest average scores were found in those whose mothers were university graduate ( $\bar{X}$ =60.73). In contrast, the highest average scores were observed in those whose mothers were illiterate ( $\bar{X}$ =62.92), which is an interesting finding.

Prospective teachers' knowledge of coping strategies for cyberbullying was moderate ( $48<\bar{X}<64$ ) according to the "father's education level", and the Kruskal-Wallis H test results suggested no statistically significant difference ( $p=.14$ ). The lowest average scores were found in those whose fathers were high school graduates ( $\bar{X}$ =60.60). In contrast, the highest average scores were found in those whose fathers were illiterate ( $\bar{X}$ =63.50), another notable study finding.

After analyzing the differences in students' knowledge of coping strategies for cyberbullying in terms of demographic variables, the participants' preferred coping strategies were found. The coping strategies below were listed from the most preferred to the least.

TABLE III. FINDINGS ON THE STRATEGIES PREFERRED IN COPING WITH CYBERBULLYING

Item	N	Min.	Max.	$\bar{X}$	Sd
I remove any bully from my friend list.	471	1.00	5.00	4.34	.94
I prevent anyone's access to my personal information.	471	1.00	5.00	4.29	.89
I pay attention to my posts for fear of unauthorized use by others.	471	1.00	5.00	4.17	.89
In case of cyberbullying, I report it to the website administrator/company.	471	1.00	5.00	4.12	.96
I save offensive messages.	471	1.00	5.00	3.88	1.28

I read about cyberbullying on the internet (e.g., in blogs, forums, or Facebook).	471	1.00	5.00	3.84	1.06
I contact the police.	471	1.00	5.00	3.68	1.02
I seek help from my friends.	471	1.00	5.00	3.67	1.05
I seek help from my family.	471	1.00	5.00	3.36	1.20
I ask my teachers for help.	471	1.00	5.00	3.19	1.19
I talk to people who have been exposed to cyberbullying on the internet.	471	1.00	5.00	3.08	1.12
When I subscribe to a website, I do not give real information about myself.	471	1.00	5.00	2.91	1.12
I often change my e-mail address, nickname, and password to avoid such incidents.	471	1.00	5.00	2.90	1.26
I turn off my computer.	471	1.00	5.00	2.71	1.19
I delete messages without reading them.	471	1.00	5.00	2.64	1.22
I ignore such incidents and go on with my life.	471	1.00	5.00	2.62	1.27
I begin crying.	471	1.00	5.00	2.11	1.21
I simply consider it a joke or fun activity.	471	1.00	5.00	1.98	1.02
I do not use such tools again (e.g., computer, mobile phone/smartphone, tablet).	471	1.00	5.00	1.81	.86

Table 3 presents the findings on the strategies used in coping with cyberbullying. Accordingly, the most preferred cyberbullying coping strategy was "I remove any bully from my friend list." ( $\bar{X}=4.34$ ), and at least preferred strategy was "I do use such tools again (e.g., computer, mobile phone/smartphone, tablet)" ( $\bar{X}=1.81$ ).

#### IV. DISCUSSION AND CONCLUSION

This study investigated prospective teachers' knowledge of coping strategies for cyberbullying in terms of certain variables. The findings indicated that prospective teachers' knowledge of coping strategies was moderate. No study has been found that measures teachers' and prospective teachers' cyberbullying coping status. However, in Aydın, Horzum, and Ayas's (2017) study conducted with high school students, the participants had a moderate knowledge of coping strategies for cyberbullying.

Of all the coping strategies used by the prospective teachers, the most preferred coping strategy was item 10, "I remove any bully from my friend list." and the least preferred one was item 2, "I do use such tools again (e.g., computer, mobile phone/smartphone, tablet)." According to the literature, those exposed to cyberbullying used various coping strategies such as removing a bully from the friend list (Gülen & Peker, 2018), blocking and deleting an application (Dursun et al., 2020), blocking and deleting a bully (Peker, 2014), and blocking hurtful people (Turgut, 2016), which overlaps with the results of this study. Additionally, the options of leaving online chat platforms (Türkileri-İnselöz & Uçanok, 2013) and staying offline (Dursun et al., 2020) are similar to the least preferred coping strategy specified in this study.

It was found that prospective teachers had a moderate level of cyberbullying coping strategy knowledge, which differed significantly according to gender. In this regard, female participants had a higher cyberbullying coping knowledge level than male participants. Gülen and Peker (2018) and Peker (2014) found a significant difference between girls and boys in the sub-dimensions of seeking help, confronting the

bully, and online security, and the difference was in favor of girls, which is similar to our findings. Better coping strategies in girls can be associated with better awareness (Elmas, 2016; Dikmen & Çağlar, 2017; Gezgin & Çuhadar, 2012; İnam & Öztürk, 2018; Odacı & Berber-Çelik, 2018; Yalçın, 2019). Another reason may be that girls are more likely to seek help than boys in a case of a cyberbullying incident (Topçu & Erdur Baker, 2016).

The prospective teachers' knowledge of coping strategies for cyberbullying was moderate and did not differ significantly in terms of the variable of "familiarity with cyberbullying". In the study by Metin (2017) with secondary school teachers, it was observed that although all teachers tried to prevent cyberbullying, 91% of them did not take enough precautions against cyberbullying. In the study, 95% of the participants stated that they had heard of cyberbullying but still were exposed to it, which was explained by insufficient information about cyberbullying (Akyüz, 2019). It may be associated with their low level of awareness.

It was found that prospective teachers' knowledge of coping strategies was moderate and did not significantly differ by having "previous training on cyberbullying". Although those who had received training on cyberbullying had more coping strategy knowledge, it was not statistically significant. Aydın (2016) and Sarı and Seferoğlu (2019) suggested that students who received training on cyberbullying had more knowledge of cyberbullying than those who gathered information on their own. Metin (2017) emphasized the importance of training on cyberbullying since the participants were exposed to cyberbullying even though they had heard about it. Aydın et al. (2017) investigated the awareness of cyberbullying and coping strategies and recommended organizing activities to increase students' awareness of cyberbullying.

Prospective teachers' knowledge of coping strategies was moderate in terms of "daily internet use". It was observed that as the time spent on the internet increased, the coping strategy knowledge decreased, and the knowledge level did not differ significantly according to daily internet use. No research has been found on the relationship between cyberbullying coping knowledge and the frequency of internet use. Therefore, the effects of internet use are mentioned in this section. For example, Peker (2015) pointed out the role of the time spent on the internet in being a cyberbully and a cyber victim. Toprak (2018) suggested that prospective teachers who spent much time on the internet tended to cyberbully, which supports Peker's (2015) findings. In a study by Metin (2017) with secondary school teachers, 91% of the teachers were incapable of taking precautions against cyberbullying, although all of them strived to prevent cyberbullying. Among the participants, 36% did not prefer online shopping services, 27% e-citizenship platforms, and 41% online banking.

It was seen that prospective teachers' knowledge of coping strategies for cyberbullying was moderate and did not significantly differ according to the variables of "having social media accounts" and "the number of social media accounts." Those who did not use social media had higher average scores in coping with cyberbullying than those who did. The more social media accounts one had, the less knowledge of coping strategies for cyberbullying one had. No study has been found in the literature that addresses the relationship between coping level, social media use, and the number of social media accounts, so this part includes data on the effects of social

media. For instance, Metin (2017) observed that social media use was very prevalent and the participants were exposed to cyberbullying despite having heard of it. Similarly, in their studies, Kwan and Skoric (2013) and Özer (2016) indicated that those with social media accounts were exposed to more cyberbullying than those without them. Besides, Çetin (2019) and Ünver and Koç (2017) stated that active social media users tended to bully. Turgut (2016) pointed out the serious internet risks in social media. In light of these findings, it can be suggested that moderate and high-level social media users have less knowledge of cyberbullying coping strategies.

Prospective teachers' knowledge of coping strategies for cyberbullying was moderate and significantly differed according to the variable of "hiding real identity in a virtual environment". Accordingly, those who answered "yes" had more cyberbullying coping knowledge than those who answered "no". It was determined that the prospective teachers in the computer and instructional technologies department (CITD) did not hide their identity in a virtual environment, which is explained by CITD students' high self-efficacy in computer-related issues (Dikmen, 2015). It differs from the findings of this study.

According to Aytaç (2020) and Erbicer (2017), users who hide their identities in a virtual environment are likely to cyberbully. In the study by Ateş and Güler (2016), it was found that the students tend to display socially unacceptable behaviors in a virtual environment, relying on their hidden identities, which endangers the advantages of technology. These studies show that those who hide their identities do more cyberbullying than those who do not hide their identities. Given that coping strategies enhance in parallel to the awareness of cyberbullying (Aydm et al., 2017) and those who hide their identities have better-coping styles than those who do not hide, it can be inferred that people with high awareness can also engage in cyberbullying.

Prospective teachers' knowledge of coping strategies for cyberbullying was moderate and did not significantly differ by the variables of "parents' education level". It was an unexpected finding that the coping strategy knowledge level of those whose parents were illiterate was higher than other groups, and coping knowledge decreased as parents' education level increased (except for the "high school graduate" option in the father's education status). No study has examined the relationships between coping strategies for cyberbullying and parents' education level. The reason might be that high-educated mothers are generally employed, leading to spending less time with the child or that high-educated mothers are likely to behave democratically and not interfere with the child. It is a well-known fact that parents play a critical role in children's development. In this sense, it is essential for the bully or victim's healthy development and their trust in families so that they can talk to their parents in case of such incidents. Turgut (2016) and Türkileri (2012) found that in case of a cyberbullying incident, children usually try to resolve it on their own, and if they need help, they get support from their families and friends. Similarly, Gökmen (2019), Patchin and Hinduja (2006), Topçu and Erdur Baker (2016), and Topçu et al. (2008) state that students get help from their families when they are cyberbullied. In other studies, 13.1% (Dursun, Gökçe & Aytaç, 2020), 16.3% (Ayas & Horzum, 2012), 8.9% (Slonje & Smith, 2008), and 24.7% (Turgut, 2016) of the participants received support from their parents in the case of cyberbullying. However, there are studies in

which students do not prefer to seek help from their families (Özer, 2016). Those children who do not receive support from their families do not share such incidents with their parents for fear of losing their technological devices (Kowalski & Limber, 2007; Özer, 2016).

Eventually, internet addiction and social media use have increased today (Efe et al., 2021), also pointing to the prevalence of cyberbullying. As seen in this study, even if being exposed to cyberbullying, victims prefer blocking or ignoring the bullies but do not leave virtual platforms. In this regard, it is critical to inform teachers about cyberbullying, possible risks and measures, and carry out preventive guidance with school counselors. The prospective teachers participating in this study had moderate knowledge of coping strategies for cyberbullying. However, future teachers' substantial knowledge of cyberbullying can help them inform and guide their students in case of unfavorable situations. Therefore, relevant courses or training should be integrated into university curriculums, and in-service training should be provided to school teachers. The use of technology in education is inevitable and important. Teachers need to use technology for instructional goals carefully and to remind their students to be selective about technology use in their lives.

#### A. Suggestions

- In the literature, no study measures working and prospective teachers' coping strategies for cyberbullying. Available studies are limited in number and mainly focused on adolescents. It would be beneficial to work with working and prospective teachers.
- It is seen that cyberbullying coping strategies were discussed with a few demographic variables in the literature. Future studies can address several demographic variables.
- Conducting a study in which both working and prospective teachers participate would contribute to the literature.

#### B. Limitations

- It is a quantitative study. It would be helpful to support quantitative data on cyberbullying strategies with qualitative data.
- This study is limited to the prospective teachers at the Dokuz Eylül University Buca Education Faculty. Future studies can work with larger samples, which increases validity and reliability.

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