

Investigation of High School Students' Coping Strategies with Cyberbullying

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ABSTRACT

This study aims to examine the knowledge levels of high school students regarding coping strategies for cyberbullying. The sample of the study consists of 896 high school students from three different high schools in the Kahramanmaraş province. The survey model is used in the research design. The Coping Strategies for Cyberbullying Scale, developed by Koç et al. (2016), was employed as the data collection tool. The Mann-Whitney U and Kruskal-Wallis H tests were utilized for the analysis of the obtained data. It was found that the knowledge levels of students in coping strategies for cyberbullying showed a significant difference between girls and boys, particularly in the total score and the sub-dimensions of enhancing cognitive security and privacy, help-seeking, avoidance, and ignoring. In the sub-dimension of help-seeking, those without computers showed a significant difference, while in the dimensions of avoidance and ignoring, students with computers showed a significant difference compared to those without. Regarding coping strategies for cyberbullying, it was observed that students who were aware of the legal process they would face when engaging in cyberbullying significantly differed from those who were unaware, particularly in the sub-dimensions of cognitive security, increasing privacy, and seeking information. Lastly, the study revealed a significant difference in the sub-dimension of help-seeking based on the grade level. In the sub-dimension of help-seeking, the scores of 11th and 10th-grade students were found to be significantly higher than those of 9th-grade students.

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1. Introduction

The advancements in the field of Information and Communication Technologies (ICT) offer significant opportunities to improve individuals' quality of life, address issues related to social life, achieve economic gains, and maintain and enhance health through access to information and problem-solving. However, along with these advancements, certain problems arise on virtual platforms. Among these problems, cyberbullying stands out. Cyberbullying is defined as negative behaviors using technological tools with the intention of causing harm to an individual or group (Belsey, 2005; Arıca, 2011). Aydın (2016) broadens this definition to include actions such as intentionally threatening, spreading false news, excluding from a group, belittling, sharing

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photos/videos without permission, insulting, mocking, humiliating, sending viruses, obtaining passwords, establishing psychological superiority, and engaging in blackmail.

Cyberbullying, a behavior widely observed in schools today, can lead peers to harm each other using tools such as mobile phones, social media, virtual communities, instant messaging, or emails (Campbell et al., 2013). In a study conducted with middle and high school students aged 13-17 in the United States, 26.5% of the students reported experiencing cyberbullying victimization in the last thirty days (Patchin, 2023). According to Chen's (2018) research, 30.9% of middle school students in Hong Kong stated that they had been subjected to cyberbullying at least once in the last three months. Makanin, Younis, & Hayari (2017) along with Johnson et al. (2016) emphasized the prevalence of cyberbullying behaviors among middle and high school students and their negative consequences. Cyberbullying has gained increased attention in the literature due to the physical, social, and psychological destructive effects resulting in victimization that can even lead some individuals to suicide (Bhinasawi & Hasan, 2015). The situations identified in research studies can be referred to as instances of cyberbullying victimization.

Cyberbullying victims often experience feelings of sadness, frustration, or anger after encountering incidents of cyberbullying (Patchin & Hinduja, 2006; Taştekin, 2016). Cyberbullying is recognized as a universal public health issue, particularly prevalent during adolescence, and an increasingly problematic issue in school life (Gülen & Peker, 2018). The behaviors associated with cyberbullying can lead to a decrease in the quality of life for victims, cause them to experience various mental health problems, and hinder their return to normal life even if the issue is resolved (Beran & Li, 2007). Students exposed to cyberbullying at an early age may experience negative emotions such as depression or anxiety (Evangeliio et al., 2022). Individuals facing cyberbullying employ coping strategies to overcome various negative experiences.

Among the coping strategies employed by students to deal with cyberbullying, it has been noted that they resort to both technical and social solutions, such as remaining silent, avoiding confrontation, blocking the user, stopping or completely canceling access, seeking support by confiding in someone close, updating user information, and changing email or phone numbers. (Slonje & Smith, 2008; Vollink et al., 2013; Arıcağ et al., 2008; Juvonen & Gross, 2008). The strategies individuals use to cope with cyberbullying vary depending on factors such as the nature of the cyberbullying incident, the person involved, and the virtual environment where the incident occurs. In a study conducted by Aydın & Seferoğlu (2020), recommendations for university students facing cyberbullying included reporting instances of cyberbullying via phone or email to the police/prosecutor, seeking assistance from friends in response to cyberbullying on social media, confronting and resolving cyberbullying incidents involving the sharing of humiliating and mocking content on social media, and help-seeking from parents when threatened with password theft.

It can be argued that cyberbullying among individuals is easier to perpetrate compared to traditional bullying. The prevalence of information and communication technologies, along with the perception of cyber bullies that they can hide their identities and remain undetected (Shariff, 2005), is believed to contribute to the proliferation of cyberbullying incidents. Examining research findings reveals that cyberbullying is a widespread issue both in Turkey and globally, affecting both the perpetration and victimization aspects of cyberbullying (Alhajji, Bass & Dai, 2019; Biswas et al., 2020; Çetin et al., 2011; Dilmaç, 2009; Efe, Erdem & Vural, 2021; Ekşi, 2012; Taylan, Aydın & Topal, 2017). Cyberbullying, causing negative emotions in individuals, can have adverse effects not only on their daily lives but also on their academic achievements, potentially leading to a decline in academic success. To proactively address cyberbullying incidents or resolve and stop them when they occur, it is crucial for individuals to know what actions to take. Preventing cyberbullying before it occurs and creating awareness in individuals are essential for a healthy life. In consideration of this importance, comprehensive approaches encompassing different groups and variables are needed to tackle the issue of cyberbullying and raise awareness among individuals. Therefore, the aim of this study is to examine the knowledge levels of high school students regarding coping strategies for cyberbullying,

considering various variables. In the aim of this, the study includes the following primary research questions:

- What is the level of knowledge among high school students regarding coping strategies for cyberbullying?
- Is there a difference in the knowledge levels of high school students regarding coping strategies for cyberbullying based on gender?
- Is there a difference in the knowledge levels of high school students regarding coping strategies for cyberbullying based on computer ownership?
- Is there a difference in the knowledge levels of high school students regarding coping strategies for cyberbullying based on their knowledge of the legal processes related to cyberbullying?
- Is there a difference in the knowledge levels of high school students regarding coping strategies for cyberbullying based on grade level?

2. Method

In this study, a survey model was employed. A survey research is a research method that aims to collect data to identify specific characteristics of a group (Büyüköztürk et al., 2013).

2.1. Sample

In this study, the convenience sampling method was preferred. In this sampling method, researchers aim to create a sample by starting with the most accessible respondents until they reach a group of the desired size (Büyüköztürk et al., 2013). The study was conducted with the voluntary participation of 896 students from three different high schools in the Kahramanmaraş province. The demographic characteristics of the participants are presented through tables and figures.

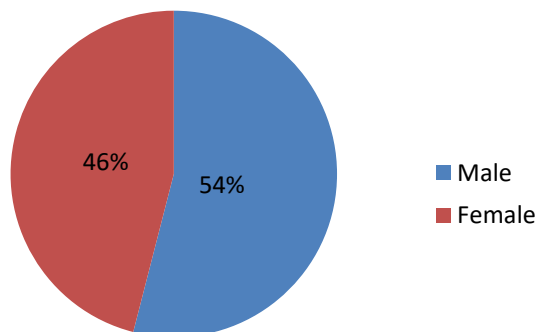


Figure 1. Gender distributions

In the Figure 1, it can be observed that 46% of the participants (413 individuals) were female, while 54% (483 individuals) are male. The class levels of the participants are provided in Table 1.

Table 1. Grade Levels of High School Students

Düzey	n	%
Grade 9	183	21
Grade 10	308	34
Grade 11	301	33
Grade 12	104	12
Total	896	100

As the Table 1 shows, it can be seen that 20% of high school students (183 individuals) were in the 9th grade, 34% (308 individuals) in the 10th grade, 33% (301 individuals) in the 11th grade, and finally, 12% (104 individuals) in the 12th grade. The highest participation was from the 10th grade, while the

lowest participation is from the 12th grade. Whether high school students are aware of the legal process they will face when engaging in cyberbullying against an individual or individuals is presented in Figure 2.

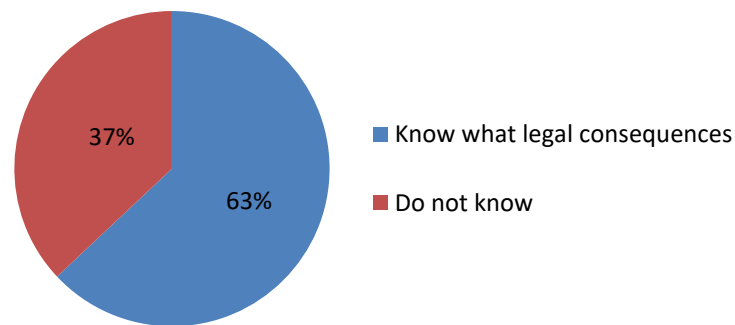


Figure 2. Being aware of the legal process in case of cyberbullying

In the Figure 2, it can be observed that when students engage in cyberbullying, 63% of them (567 individuals) indicate that they know what legal consequences they may face, while 37% (329 individuals) state that they do not know. Whether students have a personal computer is presented in Figure 3.

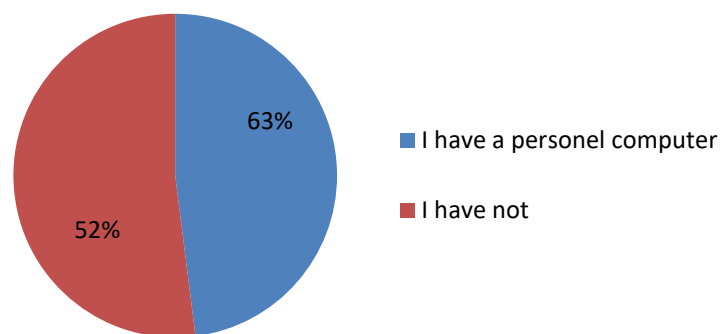


Figure 3. Being aware of the legal process in case of cyberbullying

In the 3, it can be observed that 48% of the students (n=434) have a personal computer, while 52% (n=462) do not have a personal computer.

2.2. Data Collection Tool

The "Coping Strategies for Cyberbullying Scale (CSCS)" used in the research was developed by Koç, Horzum, Ayas, Aydın, Özbay, Uğur & Çolak (2016). The scale consists of 19 items and is in a 5-point Likert scale structure, composed of 4 factors. The factors are a) enhancing cognitive security and privacy, b) avoidance and ignoring, c) help-seeking, and the last factor is d) information searching. The Cronbach's alpha internal consistency coefficient for the Coping Strategies for Cyberbullying Scale is 0.75. The scoring levels for Coping Strategies with Cyberbullying (CCS) are defined as follows: a low level of knowledge of coping strategies for cyberbullying between 19-47 points, a medium level between 48-64 points, and a high level between 65-95 points.

2.3. Data Collection and Analysis

Ethics committee approval for this research was obtained during the meeting of the Sakarya University Education Research and Publication Ethics Committee dated 13.04.2022 and numbered 06. To collect the data, researchers determined a common day and time for three different high schools in

Kahramanmaraş province. The researchers personally visited the high schools, and the students distributed and filled out the relevant scale. For the statistical analysis of the total scores and sub-dimensions (enhancing cognitive security and privacy, Help-seeking, Avoidance and ignoring, and Information searching) to be obtained from the Coping Strategies for Cyberbullying Scale, normality distribution was checked. As the data count was more than 30, the Kolmogorov-Smirnov test was used, and the skewness-kurtosis ratio to standard error was examined (Can, 2014). The results are presented in Table 2.

Table 2. Calculated values for normality distribution

Sub-Dimensions	Kolmogorov-Smirnov p	Skewness Coefficient	Skewness Standard Error	Skewness Coefficient / Standard Error Ratio	Kurtosis Coefficient	Kurtosis Error Ratio	Kurtosis Coefficient / Standard Error Ratio
Enhancing cognitive security and privacy	.000	-.768	.082	-9.365	1.230	.163	
Help-Seeking	.000	-.526	.082	-6.414	.271	.163	1.662
Avoidance and ignoring	.000	.363	.082	4.426	.238	.163	1.460
Information searching	.000	-.211	.082	-2.573	-.472	.163	-2.895
Total	.000	-.560	.082	-6.829	1.273	.163	7.809

As the Table 2 shows, the p-value for the Kolmogorov-Smirnov test conducted for the sub-dimensions of CSCS and the total score of the scale was found to be less than 0.05. However, the skewness coefficient / standard error ratio and kurtosis coefficient / standard error ratio values calculated for the sub-dimensions of CSCS and the total score of the scale, except for the help-seeking and avoidance and ignoring sub-dimensions, are outside the range of +1.96 to -1.96. Since the p-value for the Kolmogorov-Smirnov test for the sub-dimensions of CSCS and the total score of the scale is less than 0.05, and the skewness coefficient / standard error ratio and kurtosis coefficient / standard error ratio values are mostly outside the range of +1.96 to -1.96, the data does not show a normal distribution (Can, 2014). Therefore, non-parametric tests were used in the analysis of the data. These tests were Mann Whitney-U and Kruskal Wallis-H according to the variables. In addition, percentage and frequency values were used for descriptive statistics. The effect size values for Mann Whitney-U test results were calculated using the Common Language Effect Size (CLES) (McGraw & Wong, 1992).

3. Findings

In this section, descriptive and interpretative statistics obtained from the analysis results are presented. First, the percentage and frequency values of high school students' levels of knowledge regarding coping strategies against cyberbullying were calculated. The results are presented in Table 3.

Table 3. Knowledge levels of students regarding coping strategies against

Level	N	%
Low	78	9
Moderate	533	59
High	285	32
Total	896	100

As the Table 3 indicates, it is revealed that 9% (n=78) of the high school students participating in the research have a low level of knowledge regarding coping strategies against cyberbullying, 59% (533 individuals) have a moderate level, and 32% (n=285) have a high level.

Second, whether there was a difference in the knowledge level of high school students regarding coping strategies against cyberbullying based on gender was examined using the Mann Whitney-U test. The results are presented in Table 4.

Table 4. Comparison of knowledge levels of students regarding coping strategies against cyberbullying scores by gender

Coping strategies with cyberbullying	Gender	N	Rank Mean	Rank Average	U	p
Enhancing cognitive security and privacy	Female	413	482.53	199286.50	85683.50	.000
	Male	483	419.40	202569.50		
Help-Seeking	Female	413	499.20	206171.50	78798.50	.000
	Male	483	405.14	195684.50		
Avoidance and ignoring	Female	413	503.41	207906.50	77063.50	.000
	Male	483	401.55	193949.50		
Information searching	Female	413	450.11	185896.00	99074.00	.805
	Male	483	447.12	215960.00		
Total Score	Female	413	509.62	210471.00	74499.00	.000
	Male	483	396.24	191385.00		

As Table 4 indicates, it is observed that there is a statistically significant difference between high school students' coping strategies scores with cyberbullying and their genders in all sub-dimensions except the information-searching sub-dimension and the total score. Female students' coping strategies with cyberbullying scores for the sub-dimensions of enhancing cognitive security and privacy ($U=85683.50$, $p<.05$), help-seeking ($U=78798.50$, $p<.05$), avoidance and ignoring ($U=77063.50$, $p<.05$), and coping strategies with cyberbullying total scores ($U=74499.00$, $p<.05$) were found to be significantly higher than those of male students. These results may be attributed to female students being more exposed to cyberbullying or being more cautious. For the sub-dimensions where significant differences were found, the effect size values were calculated as follows, respectively: Enhancing Cognitive Security and Privacy .246, Help-seeking .368, Avoidance and Ignoring .400, Coping Strategies with Cyberbullying Total Score .448. According to these calculations, effect size values less than 0.5 indicate that the effect is small, and practical significance is low (McGraw and Won, 1992).

Thirdly, whether there was a significant difference in the knowledge level of high school students regarding coping strategies against cyberbullying based on computer ownership was examined using the Mann Whitney-U test. The results are presented in Table 5.

As shown in Table 5, a significant difference is observed in high school students' coping strategies for cyberbullying scores based on computer ownership, particularly in the help-seeking, avoidance, and ignoring sub-dimensions. However, no significant difference is found in other sub-dimensions or total scores. The help-seeking sub-dimension scores of students without computer ownership were significantly higher than those of students with computer ownership ($U=92680.50$, $p<.05$). Conversely, the avoidance and ignoring sub-dimension scores of students with computer ownership were significantly higher than those of students without computer ownership ($U=87252.50$, $p<.05$). This finding suggests that students who own computers may be more adept at coping with cyberbullying. For the sub-dimensions with significant differences, the effect size values were calculated as follows: help-seeking .131, avoidance and ignoring .226. According to these calculations, effect size values less than 0.5 indicate a small effect, with low practical significance (McGraw and Wong, 1992).

Table 5. Comparison of knowledge levels of students regarding coping strategies against cyberbullying scores by computer ownership

Coping strategies with cyberbullying	Computer ownership	N	Rank Mean	Rank Sum	U	p
Enhancing cognitive security and privacy	Yes	462	439.78	203177.00	96224,00	.296
	No	434	457.79	198679.00		
Help-Seeking	Yes	462	432.11	199633.50	92680,50	.049
	No	434	465.95	202222.50		
Avoidance and ignoring	Yes	462	476.64	220208.50	87252,50	.001
	No	434	418.54	181647.50		
Information searching	Yes	462	444.73	205466.50	98513,50	.649
	No	434	452.51	196389.50		
Total Score	Yes	462	447.61	206797.50	99844,50	.916
	No	434	449.44	195058.50		

Fourth, whether there was a significant difference in high school students' knowledge levels of coping strategies against cyberbullying based on whether they know the legal process that will occur when they engage in cyberbullying was examined using the Mann Whitney-U test. The results are presented in Table 6.

Table 6. Comparison of knowledge levels of students regarding coping strategies against cyberbullying scores by knowing the legal process related to cyberbullying

Coping strategies with cyberbullying	Knowing the Legal Process	N	Rank Mean	Rank Sum	U	p
Enhancing cognitive security and privacy	No	329	417.27	137282.50	82997,50	.006
	Yes	567	466.62	264573.50		
Help-Seeking	No	329	428.95	141125.00	86840,00	.084
	Yes	567	459.84	260731.00		
Avoidance and ignoring	No	329	468.91	154273.00	86555,00	.071
	Yes	567	436.65	247583.00		
Information searching	No	329	408.98	134555.00	80270,00	.000
	Yes	567	471.43	267301.00		
Total Score	No	329	425.36	139944.50	85659,50	.041
	Yes	567	461.93	261911.50		

As the Table 6 indicates, it is observed that there is a significant difference between high school students' Coping strategies with cyberbullying scores and knowing the legal process in terms of enhancing cognitive security and privacy, information searching, and total scores, while there is no significant difference in other sub-dimensions. Students who know the legal process scored significantly higher than those who do not know the legal process in enhancing cognitive security and privacy ($U=82997.50$, $p<.05$), information seeking ($U=80270.00$, $p<.05$) sub-dimension scores, and total scores ($U=85659.50$, $p<.05$). This finding may be due to students who know the legal process having more awareness of cyberbullying and being more competent in terms of digital literacy. For the sub-dimensions where significant differences were found, the effect size values were calculated as follows, respectively: Enhancing Cognitive Security and Privacy .185, Information Searching .234, Total Score .137. According to these calculations, effect size values less than 0.5 indicate that the effect is small, and practical significance is low (McGraw & Won, 1992).

Fifth, whether there was a significant difference in high school students' knowledge levels of coping strategies against cyberbullying according to their grade levels was examined using the Kruskal Wallis-H test. The results are presented in Table 7.

Table 7. Comparison of knowledge levels of students regarding coping strategies against cyberbullying scores by grade level

Coping strategies with cyberbullying	Grade level	N	Rank Mean	sd	χ^2	p
Enhancing cognitive security and privacy	9th	183	430.55	3	2.572	.462
	10th	308	459.27			
	11th	301	456.50			
	12th	104	425.03			
Help-Seeking	9th	183	398.07	3	9.986	.019
	10th	308	473.38			
	11th	301	453.25			
	12th	104	449.80			
Avoidance and ignoring	9th	183	444.09	3	.958	.812
	10th	308	439.55			
	11th	301	455.44			
	12th	104	462.68			
Information searching	9th	183	477.96	3	6.549	.088
	10th	308	461.27			
	11th	301	423.58			
	12th	104	430.98			
Total Score	9th	183	432.71	3	1.196	.754
	10th	308	457.25			
	11th	301	451.99			
	12th	104	440.25			

According to the analysis results in Table 7, it is observed that there is a significant difference in high school students' coping strategies with cyberbullying scores only in the help-seeking sub-dimension concerning grade levels, χ^2 (df = 3, n = 896) = 9.986, $p < .05$. There is no significant difference in other sub-dimensions and total scores. Mann Whitney U-Test was conducted to determine between which groups there is a significant difference, and the results are presented in Table 8.

Table 8. Post-hoc results of comparing students' knowledge levels of coping strategies against cyberbullying scores by grade level

Coping strategies with cyberbullying	Grade Level	N	Rank Mean	Rank Sum	U	p
Help-Seeking	9th	183	220.19	40295.50	23459.50	.002
	10th	308	261.33	80490.50		
	9th	183	223.99	40990.50	24154.50	.023
	11th	301	253.75	76379.50		
	9th	183	137.89	25233.50	8397.50	.096
	12th	104	154.75	16094.50		
	10th	308	311.88	96058.00	44236.00	.327
	11th	301	297.96	89687.00		
	10th	308	209.17	64424.00	15194.00	.432
	12th	104	198.60	20654.00		
	11th	301	203.54	61264.50	15490.50	.875
	12th	104	201.45	20950.50		

Table 8 shows a significant difference in the help-seeking help subscale scores of high school students between 9th and 10th grades, and between 9th and 11th grades. However, no significant difference is observed among other grade levels. Specifically, the help-seeking scores of 10th-grade students are significantly higher than those of 9th-grade students ($U=23459.50$, $p<.05$). Similarly, the help-seeking scores of 11th-grade students are significantly higher than those of 9th-grade students ($U=21154.50$, $p<.05$). The effect size values for these significant comparisons are calculated as follows: The effect size for the comparison between 9th and 10th grades is .283, and for the comparison between 9th and 11th grades is .241. According to these effect size values, the effect is considered small, indicating low practical significance (McGraw & Wong, 1992).

4. Conclusion and Discussions

In this research, first of all, the levels of high school students' knowledge about coping strategies with cyberbullying were determined. It was found that 59% of the high school students participating in the study had a moderate level of knowledge, 32% had a high level, and 9% had a low level of knowledge about coping strategies with cyberbullying. In a study conducted by Aydın, Horzum, and Ayas (2016) in 12 different cities across Turkey, it was determined that 50% of 8591 high school students had a moderate level, 42% had a high level, and 8% had a low level of knowledge about coping strategies with cyberbullying. It can be said that high school students, in general, have knowledge about coping strategies with cyberbullying. However, it was also observed that there are students with a low level of knowledge.

The knowledge level and sub-dimensions of coping strategies with cyberbullying among high school students, including enhancing cognitive security and privacy, help-seeking, and avoidance and ignoring dimensions, show significant differences based on gender. It was found that female students had higher levels of coping strategies with cyberbullying compared to male students. Additionally, when faced with cyberbullying, it was concluded that females exhibited higher behaviors in enhancing cognitive security and privacy, help-seeking, and avoidance and ignoring compared to males. When reviewing the literature, various studies have consistently shown that females experience more instances of cyberbullying or victimization than males (Dilmaç, 2009; Kowalski & Limber, 2007; Vandebosch & VanCleemput, 2009; Vieira et al., 2016). Therefore, the higher engagement of female students in actions such as stopping, preventing, protecting themselves, and avoiding recurring negative incidents in response to cyberbullying can be considered a contributing factor. Seeking social support is an effective coping strategy for dealing with cyberbullying victimization, especially for girls, although it may not be utilized enough (Vieira et al., 2016). No significant difference was found in the dimension of information searching.

Among the sub-dimensions of high school students' coping strategies with cyberbullying, help-seeking and avoidance and ignoring show significant differences based on computer ownership. It was found that students who do not own a computer have higher levels of help-seeking, while students who own a computer exhibit higher levels of avoidance and ignoring. In a study conducted by Chen & Zhu (2022), cyberbullying victims were found to prefer doing nothing or relying on themselves rather than help-seeking. Vieira et al. (2016) indicated in their study that individuals exposed to cyberbullying exhibit help-seeking behavior and use information and communication technologies more cautiously. Therefore, the lesser experience of those without computers in the online environment, not knowing what to do when faced with a negative event, could be contributing factors to these differences. Additionally, there was no significant difference in the knowledge level and sub-dimensions of high school students' coping strategies with cyberbullying, including enhancing cognitive security and privacy, help-seeking, and information searching dimensions, based on computer ownership.

Among the sub-dimensions of high school students' coping strategies with cyberbullying, there was a significant difference based on whether they knew the legal process or not, particularly in the dimensions of enhancing cognitive security and privacy and information searching. It has been

concluded that those who knew the possible legal processes when engaging in cyberbullying exhibited higher behaviors in enhancing cognitive security and privacy and information searching compared to those who do not know. This may be attributed to their higher knowledge of coping strategies due to their understanding of potential sanctions when engaging in cyberbullying and how cyberbullies are identified. Additionally, there is no significant difference in the knowledge level and sub-dimensions of high school students' coping strategies with cyberbullying, including help-seeking and avoidance and ignoring dimensions, based on whether they know the legal process or not.

In the study, there was no significant difference in the knowledge level and sub-dimensions of high school students' coping strategies with cyberbullying, including enhancing cognitive security and privacy, information searching, and avoidance and ignoring dimensions, based on their grade level. However, in the dimension of help-seeking, there was a significant difference between students in the 11th and 10th grades compared to those in the 9th grade. These findings suggest that, in terms of age, younger individuals tend to have lower levels of coping strategies in the dimension of help-seeking in dealing with cyberbullying compared to others. Some studies in the literature indicate that students undergoing primary and middle-level education may experience negative emotions when exposed to cyberbullying at an early age (Carlos et al., 2022). These results may suggest that students, influenced by the mentioned circumstances, tend to withdraw and may be less inclined to seek help.

5. Suggestions

Education programs and awareness campaigns on coping strategies for cyberbullying can be further developed in a more comprehensive and effective manner. When assisting individuals in dealing with cyberbullying during their high school years, gender differences should be taken into account. Teachers and administrators within schools can conduct studies to assess students' awareness of coping with cyberbullying and their knowledge of resources related to coping strategies. Collaborating with social workers and other professionals could contribute to increasing awareness and providing resources for coping with cyberbullying. Further research in this area could contribute to the development of more effective interventions aimed at supporting young people in establishing safe and healthy communication in the digital environment.

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