The Effects of Psychological Resilience, Self-efficacy and Metacognition on Cyberbullying Among Adolescents

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Abstract

Cyberbullying, which has become more widespread with individuals' increased use of technology, occurs when someone or a group of people intentionally harms by using technology. Millions of adolescents spend time in the online environment, yet little is known about the effects of psychological resilience, self-efficacy, and metacognition on the risk of cyberbullying. A total of 574 high school students were recruited and instructed on the Sociodemographic Questionnaire, Cyberbullying Scale (CBS), Child and Youth Psychological Resilience Scale (CYPRS), Self-Efficacy Questionnaire for Children (SEQ-C), and Metacognitions Questionnaire for Children and Adolescents (MCQ-C). A negative correlation was found between education level, the CYPRS, the SEQ-C and the CBS. All subtests of the MCQ-C was positively correlated with the CBS. Regression analysis revealed that CYPRS and the negative meta-worry subtest of the MCQ-C predict the CBS. Our study revealed the importance of psychological resilience and negative meta-worry in cyberbullying among adolescents. Strengthening psychological resilience may be a useful strategy for reducing the detrimental impacts of cyberbullying on adolescents. Metacognitive psychotherapy models that focus on negative meta-worry and improving psychological resilience by psychotherapeutic methods may be a useful strategy for reducing the detrimental impacts of cyberbullying on adolescents. Further longitudinal studies are required to foster the established association between these constructs.

Keywords Cyberbullying · Cybervictimization · Psychological resilience · Self-efficacy · Metacognition · Adolescent

In recent years, the advancement of technology and adolescents' widespread use therefore have enabled students in schools to perpetrate bullying behaviors using technological tools. Their negative online messages, which have increased rapidly, are described as cyberbullying (Yaman & Peker, 2012). The literature defines cyberbullying as "deliberate, repetitive, hostile behavior by a person or group with the intention to harm others through the use of electronic communication technologies such as e-mail, instant messaging, and social media" (Smith et al., 2008; Langos, 2012; Schneider et al., 2012). Also known as online bullying, digital bullying, electronic bullying, internet bullying, and online abuse, cyberbullying is sometimes referred to as the "dark side" of technology (Kowalski & Limber, 2007). Bullying behaviors encountered in schools are frequently covered in studies as an essential issue (Berger & Caravita, 2016; Mishna et al., 2012). Several studies have found that the power of the bully comes from their technological capabilities rather than their physical stature (Hinduja & Patchin, 2008; Patchin & Hinduja, 2006, 2015). With the rapid rise of technology and the spread of communication tools, it is seen that adolescents overshare on social media (Arıcak et al., 2012a), paving the way for them to become victims (Arıcak et al., 2012b).

The majority of adolescents who are cyberbullied experience some psychological effects, including fear (Raskauskas & Stoltz, 2007), anxiety (Kowalski & Limber, 2013; Kranzler et al., 2015), depressive behavior (Erdur-Baker & Tanrıkulu, 2010), substance use (Mitchell et al., 2007), feelings of revenge (König et al., 2010), a lack of social abilities (Kokkinos et al., 2014; Dennehy et al., 2020), and negative

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academic outcomes such as school failure (Diamanduros et al., 2008). Furthermore, victims of cyberbullying may experience physical symptoms such as weight loss or weight gain, headaches, and stomach and sleeping problems (Gámez-Guadix et al., 2013). They may also develop into cyber aggressors or become victims in different contexts (Ybarra & Mitchell, 2007; Fanti et al., 2012).

Psychological Resilience

Researchers have identified protective factors, such as resilience, that might mitigate the negative impacts of cyberbullying (Hinduja & Patchin, 2017; Karaırmak, 2006; Papatraianou et al., 2014). In recent years, studies on resilience as a psychological concept for overcoming adversity has gained popularity (Luthar et al., 2006; Santos et al., 2021). Psychological resilience is defined as the capacity to rise above adversity, adapt and modify, maintain sound mental health, and bounce back after adversity (Aburn et al., 2016). Moreover, it is the capacity to endure and even become stronger in the face of danger. Indeed, studies have indicated that psychological resilience is an essential protective factor in cyberbullying (Hinduja & Patchin, 2017; Kabadayi & Sari, 2018; Navarro et al., 2018). ln line with this notion, adolescents who are resilient are less prone to being victims of cyberbullying than those who are less resilient (Santos et al., 2021). Hinduja and Patchin (2017) found that students with more psychological resilience were less likely to report being online victims, and among those who did report being victims, their psychological resilience worked as a "buffer," preventing negative effects at school. Therefore, psychological resilience is one of the most important features that enable students to recover quickly in the face of stressful life events (Güngörmüş et al., 2015; Tobias & Chapanar, 2016; Arzu & Nmez, 2022).

Self-Efficacy

Self-efficacy is a person's belief that they can effectively perform specific actions and the cognitive representation that these actions can be completed successfully (Bandura, 1978; Bandura & Adams, 1977). According to Bandura (1978), self-efficacy refers to an individual's belief in their own abilities and capacity to carry out prescribed tasks or behaviors effectively. Previous studies have revealed the associations between adolescents' self-efficacy and cyberbullying (Bussey et al., 2020; Clark & Bussey, 2020; Özdemir & Bektaş, 2021). Peker et al. (2021) found that students who were exposed to cyberbullying reported lower self-efficacy than those who were not exposed to cyberbullying.

Likewise, Peker and Yildiz (2021) emphasized that adolescents who have been the victims of cyberbullying and have low self-efficacy are more prone to engage in cyberbullying behaviors, and when cyberbullying becomes more prevalent, self-esteem decreases as well. Furthermore, Bandura (1978) stated that self-efficacy beliefs are essential determinants of one's behavior. Individuals with a strong sense of self-efficacy understand how to handle life challenges and are capable of coping with scenarios involving dangerous behaviors (Bandura, 1978). Moreover, they reported being able to resolve social difficulties without resorting to aggressiveness, corroborating this notion (Nikel, 2020). In this respect, increased self-efficacy among victims of cyberbullying protects them from the negative consequences of victimization, hence reducing their aggressiveness and preventing them from having feelings of revenge (Peker et al., 2021).

Metacognition

Metacognition has various definitions; however, it generally refers to the brain mechanisms that regulate, monitor, organize, and evaluate cognition. As it involves a wide range of activities, psychopathological cognitive patterns are likely to be derived from maladaptive functioning in metacognition. These maladaptive metacognitions refer to dysfunctional beliefs about the meaning of cognitive-affective experiences and the problematic ways to control such experiences. Examples include "I need to control my thoughts at all times" (a negative belief about worry) or "worry will help me solve problems" (a positive belief about worry) (Wells, 2013). Following this line of thought, numerous studies have shown that dysfunctional and maladaptive patterns, regardless of their content, including positive or negative metacognitive beliefs, have an essential influence on the development of psychopathological symptoms (Yılmaz et al., 2011; Wells, 2013; Gini et al., 2019). Individuals with psychological problems tend to respond to negative thoughts with prolonged rumination or worry due to their positive beliefs about the value of such a process (i.e., that worry or rumination is effective); moreover, when the worry persists, they begin to have negative beliefs that this process is out of their control (i.e., worry or rumination is harmful; Wells & Matthews, 1996; Wells, 2013; Yılmaz et al., 2011). These beliefs are acknowledged as significant cognitive determinants in forecasting distress across a wide variety of psychological disturbances, including schizophrenia (Lysaker & Dimaggio, 2014), major depressive disorder (Papageorgiou & Wells, 2001), obsessive compulsive disorder (Irak & Tosun, 2008), eating disorder (Palmieri et al., 2021), gambling disorder (Rogier et al., 2021), generalized anxiety disorder and panic disorder (Aydın et al., 2019), problematic

social media use (Balıkçı et al., 2020), and problematic internet use (Spada & Marino, 2017). Studies exploring the associations between metacognition and cybervictimization are scarce and present contradictory results. For example, in one study, no metacognitions were found to be related to cybervictimization. However, the authors stated that a particular subdimension of metacognitive beliefs, namely cognitive confidence (beliefs about not trusting one's cognitive capabilities), was found to mediate the relationship between quality of life and cybervictimization (McLoughlin et al., 2022). In a recent study, which also examined the relationship between metacognition and cybervictimization among adolescents with psychiatric illness, negative metacognitive beliefs about thoughts in general were found to be related to cybervictimization. The researchers concluded that when adolescents preserve these typical beliefs during cyber activities, it may escalate negative cognitive-affective states, which may cause and/or increase the risk for cybervictimization (Ünal-Aydın et al., 2023).

Yüksel and Çekiç (2019) revealed that after middle school students participated in a cyberbullying prevention program based on cognitive behavioral therapy, their cyberbullying scores decreased, and their cognitions about cyberbullying increased positively. Additionally, in a previous study examining adolescents' strategies for coping with cyberbullying, it was shown that they utilized techniques such as increasing awareness of cyberbullying, harnessing a feeling of knowing what to do, or considering prior experiences and shifting their focus of thought (Neaville, 2017).

Purpose of the Present Study

Despite the growing literature on cyberbullying, there is a paucity of studies that examine the role of metacognition in particular. Furthermore, no cyberbullying study has examined psychological resilience, self-efficacy, and metacognition among the adolescent population. Therefore, the major objective of this study is to investigate the predictive roles of these three variables in cyberbullying. We hypothesize that (i) lower levels of psychological resilience, (ii) lower levels of self-efficacy, and (iii) higher levels of dysfunctional metacognitions are associated with higher exposure to cyberbullying among individuals.

Methods

Participants and Procedure

We recruited 574 participants for the study, all of whom were high school students residing in Turkey. We reached out to them via online forms, which their lecturers shared with them on different social networking platforms (i.e., WhatsApp, Telegram, and Facebook). The sample was gathered within 2 months. First, schoolteachers were informed about the purpose of the study. Thereafter, the guardians of adolescents were asked to provide written consent prior to the study, which stated their right to withdraw from the study at any time without penalties. Being a high school student (9th–12th grade) and being able to complete the online forms/tests were the inclusion criteria. On average, the online questionnaires took 25 min to complete, and in exchange for participation, the students were given random bookstore gift cards. The study was approved by the Institutional Review Board of the (Blinded for Review), and official permissions were provided from school directorates.

Measures

Sociodemographic Form

We created a sociodemographic form to gather general information about participants (e.g., gender, education level, and income level) that may be used in relation to other variables. The form also enquired about internet usage and the type of device used for internet connection.

Cyberbullying Scale

We used the Turkish version of the Cyberbullying Scale (CBS). This measure has 14 items and two subdimensions: (1) *emotional harm and humiliation* and (2) *exclusion and violence*. The reliability and validity study of the Turkish version's total item count was reduced to 13 (Cronbach's $\alpha = 0.87$; Küçük et al., 2017). The following are examples of the items included in the two subdimensions of this scale: (1) "How often does a kid tell lies about you in texts or online to make other kids not like you anymore?" and "How often does another kid say online that they won't like you unless you do what they want you to do?" (2) "How often do other kids leave you out of online groups on purpose?" and "How often do you get online or text messages from another kid threatening to beat you up or hurt you physically?" The factor loadings of the scale items were found to range between 0.85 and 0.74. The measure is rated on a Likert scale from 1 (*never*) to 5 (*all the time*). We considered the overall score for our study purpose, with higher scores indicating higher levels of exposure to cyberbullying by others.

Child and Youth Psychological Resilience Scale

We used the Turkish version of the short form of the Child and Youth Psychological Resilience Scale (CYPRS), which

contains 12 items. Arslan (2015) conducted a reliability and validity study for the Turkish version and found strong internal consistency (Cronbach's α = 0.91) with a one-factor solution. The factor loadings of the scale items (e.g., "I have opportunities to develop skills that will be useful later in life") were found to range from 0.54 to 0.81. The scale items are rated on a 5-point Likert scale, where 1 = *does not describe me at all* and 5 = *describes me a lot* (Arslan, 2015). Cronbach's alpha was 0.81 in this study. Higher scores indicate higher levels of psychological resilience.

Self-Efficacy Questionnaire for Children

We used the Turkish version of the Self-Efficacy Questionnaire for Children (SEQ-C). This measure has 21 items; three subdimensions; Cronbach's alpha values of 0.86 for self-efficacy, 0.84 for academic self-efficacy, 0.64 for social self-efficacy, and 0.78 for emotional self-efficacy; and sufficient test-retest reliability ($r = .75–0.89$) (Telef & Karaca, 2012). Each subdimension consists of seven items. The first subdimension, *social-self-efficacy* (e.g., "How well can you become friends with other children?"), assesses adolescents' ability to notice peer relationships. The second subdimension, *academic self-efficacy* (e.g., "How well can you study when there are other interesting things to do?"), assesses perceptions of academic achievement, expectation, and the ability to manage one's own learning. The last subdimension, *emotional self-efficacy* (e.g., "How well can you control your feelings?"), assesses participants' perceptions of their capacity to deal with negative emotions. The scale items are rated on a 5-point Likert scale (1 = *not at all* to 5 = *very well*). Cronbach's alpha was 0.88 in this study. The scale has a maximum score of 105 and a minimum score of 21. Higher scores indicate higher levels of self-efficacy.

Metacognitions Questionnaire for Children and Adolescents

The Turkish version of the Metacognitions Questionnaire for Children and Adolescents (MCQ-C) was utilized. It comprises 24 items divided into the following four subscales: *positive meta-worry* (PMW; e.g., "Worrying helps me feel better" and "Worrying helps me solve problems"); *negative meta-worry* (NMW; e.g., "If I worry a lot, I could make myself sick" and Once I start worrying about something, I cannot stop"); *superstition, punishment, and responsibility* (SPR; e.g., "It is bad to think about certain things" and "I should be able to tell myself to stop and start thinking about things whenever I want to"), and *cognitive monitoring* (CM; e.g., "I pay a lot of attention to the way that I think" and "I often notice the thoughts that I have in my head").

The reliability and validity study of the Turkish version found strong internal consistency (Cronbach's α = 0.73) and sufficient test-retest reliability ($r = .76 – 0.82$; Irak, 2012). The scoring is based on a 4-point Likert scale (1 = *do not agree* to 4 = *agree very much*). Cronbach's alpha was 0.81 in this study. Scores may range from 24 (minimum) to 96 (maximum), with higher scores indicating greater metacognitive disability.

Data Analysis

Analyses were carried out using the Statistical Package for Social Sciences (SPSS) 25.0 statistical package program. We calculated the skewness and kurtosis coefficients to examine the distribution of cyberbullying, resilience, self-efficacy, and metacognition scores. Coefficients in the range of ± 2 indicate that the assumption of normal distribution is met (George & Mallery, 2010). Furthermore, we calculated Pearson correlation coefficients to examine the relationships among cyberbullying, psychological resilience, self-efficacy, and metacognition. Finally, we performed hierarchical multiple regression analyses to determine the predictive effect of resilience, self-efficacy, and metacognition on cyberbullying.

H1: A lower level of psychological resilience is associated with higher cybervictimization.

H2: A lower level of self-efficacy is associated with higher cybervictimization.

H3: Higher levels of dysfunctional metacognitions are associated with higher cybervictimization.

Results

Descriptive Results

We performed percent-frequency analysis to determine the distribution of the participants according to their sociodemographic characteristics. This distribution is listed in Table 1. The education levels of adolescents were as follows: 9th grade 28.2% ($n = 162$), 10th grade 23.9% ($n = 137$), 11th grade 19.0% (n = 109), and 12th grade 28.9% ($n = 166$). The percentages of female and male adolescents were 62.2% ($n = 357$) and 37.8% ($n = 217$), respectively. Regarding total time on the internet, 37.8% ($n = 217$) of the participants stated that they used the internet for 3–4 h per day, and 32.3% ($n = 214$) used it for more than 5 h per day. Participants were exposed to cyberbullying mostly through online games (26.5%), social communication networks (23.3%), text messages (17.5%), instant messaging (12.5%), and chat rooms (9.0%).

Table 1 *Socio-Demographic Features of the Sample*

	N	%
Educational level		
Grade 9	162	28.2
Grade 10	137	23.9
Grade 11	109	19.0
Grade 12	166	28.9
Gender		
Female	357	62.2
Male	217	37.8
Monthly income		
2000 TL	58	10.1
2000–5000 TL	334	58.2
5000 TL	182	31.7
Total time of internet		
Less than 1 h per day	19	3.3
1–2 h per day	124	21.6
3–4 h per day	217	37.8
More than 5 h per day	214	37.3
Device connection		
Mobile phone	467	81.4
Laptop or computer	90	15.7
Tablet	17	3.0

Note. TL: Turkish Lira

Correlations Between Education Level; Gender; Monthly Income; Total Time on Internet; and CYPRS, SEQ-C, MCQ-C, and CBS Scores

According to the results of the analysis with corresponding coefficients, as shown in Table 2, there are several associations between CBS score and other variables. Education level ($r = -.09$, $p < .05$), CYPRS score ($r = -.34$, $p < .01$), and SEQ-C score ($r = -.17$, $p < .01$) were negatively correlated with the CBS score, indicating that higher levels of education, more psychological resilience, and greater self-efficacy are related to lower cybervictimization, as expected. However, we found a positive correlation between gender ($r = .09$, $p < .05$), MCQ-PMW ($r = .13$, $p < .01$), MCQ-NMW ($r = .24$, $p < .01$), MCQ-SPR ($r = .18$, $p < .01$), and MCQ-CM ($r = .17$, $p < .01$) on the one hand and CBS score on the other, indicating that more dysfunctional metacognitive beliefs are associated with more exposure to cyberbullying.

Hierarchical Multiple Regression Analyses

In the first step of hierarchical multiple regression, education level ($\beta = -0.09$, $t = -2.21$, $p < .05$) significantly contributed to the CBS score, $F(1, 573) = 4.92$, $p < .05$, accounting for 1% of the variance. In the second step, the gender variable was added to the model. The education level ($\beta = -0.09$, $t = -2.27$, $p < .05$) and gender ($\beta = 0.09$, $t = 2.09$, $p < .05$) variables were both significant predictors of cyberbullying, $F(2, 573) = 4.65$, $p < .05$, representing 2% of the variance. In the third step, the variables psychological resilience and self-efficacy were added to the model. Only education level ($\beta = -0.10$, $t = -2.62$, $p < .05$), gender ($\beta = 0.10$, $t = 2.57$, $p < .05$), and psychological resilience ($\beta = -0.37$, $t = -7.42$, $p < .001$) had a significant effect on cyberbullying, $F(4, 573) = 22.58$, $p < .001$. Therefore, H1, hypothesizing that a lower level of psychological resilience is associated with higher cybervictimization, is supported. However, self-efficacy had no significant effect on cyberbullying, and H2, hypothesizing that a lower level of self-efficacy is associated with higher cybervictimization, is thus not supported. The variance explained increased compared with that in the previous step, accounting for 14%. In the final step, all MCQ-C

Table 2 *Pearson Correlations Between the Study Variables*

	Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1.	Educational level	1										
2.	Gender	0.02	1									
3.	Monthly income	−0.06	0.08*	1								
4.	Total time of internet	−0.08	−0.02	0.20**	1							
5.	CYPRS	−0.02	0.06	0.09*	−0.17**	1						
6.	SEQ-C	−0.03	0.18**	0.03	−0.23**	0.63**	1					
7.	MCQ-PMW	0.06	−0.14**	−0.04	0.04	−0.07	−0.14**	1				
8.	MCQ-NMW	0.02	−0.15**	−0.03	0.01	−0.11*	−0.26**	0.57**	1			
9.	MCQ-SPR	−0.05	−0.19**	−0.06	0.07	−0.15**	−0.30**	0.60**	0.57**	1		
10.	MCQ-CM	0.03	−0.07	−0.03	0.01	−0.03	−0.10*	0.58**	0.63**	0.60**	1	
11.	CBS	−0.09*	0.09*	−0.01	0.07	−0.34**	−0.17**	0.13**	0.24**	0.18**	0.17**	1

Note. ** $p < .01$, * $p < .05$, N = 574

CYPRS: *Child and Youth Psychological Resilience Scale* SEQ: Self-Efficacy Questionnaire, MCQ: Metacognition Questionnaire, MCQ-PMW: Positive meta-worry, MCQ-NMW: Negative meta-worry, MCQ-SPR: Superstition, punishment and responsibility, MCQ-CM: Cognitive monitoring, CBS: Cyberbullying Scale

subdimensions were added to the model. Only educational level ($\beta = -0.10$, $t = -2.69$, $p < .01$), gender ($\beta = 0.13$, $t = 3.33$, $p < .01$), CYPRS ($\beta = -0.40$, $t = -8.08$, $p < .001$), and MCQ-NMW ($\beta = 0.21$, $t = 3.86$, $p < .001$) had a significant effect on cyberbullying, F (8, 573) = 17.06, $p < .001$. By contrast, self-efficacy, MCQ-PMW, MCQ-SPR, and MCQ-CM had no significant effect on cyberbullying. The variance explained by the final model increased to 20%. Therefore, H3, hypothesizing that higher levels of dysfunctional metacognitions are associated with higher cybervictimization, is supported, as shown in Table 3.

Discussion

The present study was designed to determine the relationship between adolescents' psychological resilience, self-efficacy, and metacognition on the one hand and exposure to cyberbullying on the other. The main finding of our study is that both psychological resilience and the negative meta-worry subdimension of metacognition play a key role in predicting cybervictimization. Contrary to our expectations, self-efficacy was not found to be a significant determinant of adolescents being cyberbullied.

Previous studies have corroborated the positive influence of psychological resilience in decreasing the severity of cybervictimization (Hinduja & Patchin, 2017; Kabadayi & Sari, 2018). Moreover, it has been shown that victims of cyberbullying lack psychological resilience because of the

aggressive and destructive characteristics of such bullying (Kabadayi & Sari, 2018). Therefore, it is acknowledged that decent levels of psychological resilience should be maintained to protect oneself from exposure to cyberbullying (Hinduja & Patchin, 2017). Recent studies have revealed that adolescents with higher psychological resilience can cope with difficult circumstances through their mental flexibility and problem-solving abilities (Eren Yavuz, 2023; Çalışkan Demir & Dönmez, 2022). These abilities could enhance their capacity to overcome challenging situations, to connect with people, and to improve their creativity, all of which make individuals more resilient in the face of adversity (Eren Yavuz, 2023). Therefore, we suggest that adolescents who exhibit higher levels of psychological resilience are capable of surviving adversity and uncertainty through the use of healthy, effective, and adaptable coping mechanisms, which may result in reduced cybervictimization. In line with this notion, it seems that psychological resilience has been identified as a protective factor against cyberbullying.

Another finding of our study is the negative meta-worry subdimension of metacognitions associated with cybervictimization among adolescents. Negative meta-worry or negative beliefs refer to the uncontrollability, danger, and consequences of repetitive negative thinking (e.g., "I cannot control my thoughts"). In general, the individuals respond to negative thoughts with continuous rumination and worry (Wells & Matthews, 1996; Yazar & Tolan, 2020; Yilmaz et al., 2011), and according to the metacognitive model of

Table 3 *Hierarchical Regression Statistic with Predictors of CBS*

Predicting Factors	Standardized βeta	t	p	R^2
Step 1				0.01
Educational level	-0.09	-2.21	0.027	
Step 2				0.02
Educational level	-0.09	-2.27	0.024	
Gender	0.09	2.09	0.037	
Step 3				0.14
Educational level	-0.10	-2.62	0.009	
Gender	0.10	2.57	0.010	
CYPRS	-0.37	-7.42	**< 0.001**	
SEQ-C	0.04	0.78	0.438	
Step 4				0.20
Educational level	-0.10	-2.69	0.007	
Gender	0.13	3.33	0.001	
CYPRS	-0.40	-8.08	**< 0.001**	
SEQ-C	0.12	2.25	0.025	
MCQ-PMW	-0.03	-0.47	0.636	
MCQ-NMW	0.21	3.86	**< 0.001**	
MCQ-SPR	0.05	0.84	0.400	
MCQ-CM	0.04	0.76	0.446	

Note. CBS: Cyberbullying Scale, CYPRS: *Child and Youth Psychological Resilience Scale* SEQ-C: Self-Efficacy Questionnaire, MCQ-PMW: Metacognition Questionnaire Positive meta-worry, MCQ-NMW: Metacognition Questionnaire Negative meta-worry, MCQ-SPR: Metacognition Questionnaire Superstition, punishment and responsibility, MCQ-CM: Metacognition Questionnaire Cognitive monitoring

psychological distress, worry and rumination are the core perseverative thoughts that are propelled by negative meta-cognitive beliefs (e.g., worry or rumination is uncontrollable or harmful) and lead to feelings of anxiety and depression (Wells & Matthews, 1996; Wells, 2013). Therefore, we can infer that if adolescents maintain these distinctive beliefs during online activities, the result may be an escalation of negative cognitive-affective states and increased stress, which may then put them at risk of cybervictimization (Ünal-Aydın et al., 2023). While some studies have demonstrated the negative role of specific dysfunctional meta-cognitive beliefs in cybervictimization (McLoughlin et al., 2022; Ünal-Aydın et al., 2023), further research is needed to ascertain the direction of this relationship.

Although the study has successfully demonstrated that psychological resilience and negative meta-worry may predict cybervictimization in adolescents, our findings in this report are subject to certain limitations. First, we conducted the study during the COVID-19 pandemic, when participants' stress levels were subject to fluctuation based on the daily number of cases, recurring lockdowns, and other physical limitations. Thus, the responses collected might have been influenced by psychological distress. For example, being restricted to the home environment might have affected the adolescents' self-efficacy and psychological resilience in the context of social, emotional, and academic performance. Second, collecting data through means other than web-based services was not possible during the study; hence, the reliability of the collected data may vary across participants. Third, we employed only self-report questionnaires during data collection, which raises validity concerns regarding the findings. Finally, due to the cross-sectional nature of the study, we cannot definitively report a causal relation between variables.

Despite the mentioned limitations, the results suggest that psychological resilience and negative metacognitions play a salient role in cybervictimization among adolescents. We recommend that interventions focusing on building psychological resilience and modifying negative meta-cognitive beliefs may be beneficial in decreasing the risk of cybervictimization and its negative consequences. Several methods target psychological resilience and negative metacognitive beliefs to decrease cyberbullying and cyber-victimization through enhanced awareness, compassion, and goal-directed behavior; these methods include schema-focused therapy (Taylor et al., 2017), metacognitive therapy (Normann & Morina, 2018; Wells et al., 2020), and acceptance and commitment therapy (Zarling et al., 2015; Villatte et al., 2016). Moreover, it has been demonstrated that educating adolescents about cyberbullying may be effective in reducing cybervictimization (Ortega-Ruiz et al., 2012). School social workers in particular could play a significant role in preventing cyberbullying, identifying cyberbullying, and assisting adolescents who have been cyberbullied and/or who are cyberbullies. These experts could employ a variety of intervention strategies to support adolescents in responding to cyberbullying activities in schools. Such strategies include the development of school guidelines for addressing cyberbullying and cyberbullies and the provision of counseling for victims. For instance, they can set up seminars and presentations for students to help them comprehend the responsibilities that come with using social media and technology. Our study has shed light on potential therapeutic targets (i.e., psychological resilience and negative metacognitive beliefs) for social workers while they collaborate with educators and school counselors to provide cyber victims with psychological support when needed (Wang et al., 2009).

Declaration

Conflicts of Interest None to declare.

Ethical Standards This study was approved by the Institutional Review Board of the International University of Sarajevo (24/05/2021; IUS-REC-01-921/2021).

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