



# Effective coping with cyberbullying in boys and girls: the mediating role of self-awareness, responsible decision-making, and social support

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## Abstract

There is sufficient evidence on the negative consequences of cyberbullying victimisation depending on the coping styles. Social support seeking is among the most effective strategies for coping with cybervictimisation, but it is scarcely used. The robust Maximum Likelihood (ML) method was used to test the potential mediating role of individual (self-awareness, and responsible decision-making) and contextual variables (self-perceived parental and peer support) in the relationship between cybervictimisation and social support seeking in boys and girls. This cross-sectional study collected data from 1,276 Spanish secondary school students (51.2% boys, 48.8% girls) aged 11–18 ( $M = 13.88$ ,  $SD = 1.42$ ). Structural equation modelling (SEM) results pointed out responsible decision-making and self-perceived parental support as relevant mediating factors for girls. By contrast, the model was not significant for boys. These findings highlight the importance of both individual and contextual variables in helping adolescents cope with cyberaggressions, considering gender differences.

**Keywords** Cyberbullying · Victimisation · Support · Family · Peers · Decisions

## Introduction

Many adolescent interactions occur through social networks and other virtual environments (Livingstone et al., 2017). For example, a recent macro-study of Spanish adolescents found that the most used communication modalities were WhatsApp, YouTube, Instagram, and TikTok (Andrade et al., 2021). Participation in online activities offers opportunities for social development (Navarro et al., 2016). For example, adolescents can be integrated into peer group

dynamics by participating in trending challenges on social networks (Allen et al., 2014). However, this technology also carries some risks to health and well-being (McDool et al., 2020). One of the most prevalent risks is cyberviolence (Feijóo et al., 2021). Approximately 72% of adolescents are exposed to peer cyberaggression (Chan & Wong, 2015), which constitutes cyberbullying if it occurs repeatedly (Athanasidou et al., 2018; Baldry et al., 2019). This exposure to peer cyberviolence has negative consequences (Raskauskas & Huynh, 2015). Girls are more likely to be cybervictims than boys (Völlink et al., 2013), and to suffer more severe consequences such as higher levels of anxiety (Hellfeldt et al., 2020).

Coping with cyberbullying can be difficult for adolescents, especially in terms of employing the most appropriate strategy to overcome this problem (Chen & Zhu, 2021; Machackova et al., 2013). Coping strategies involve behavioural, emotional, and cognitive responses (Heiman et al., 2019; Hu et al., 2018; Lazarus & Folkman, 1984). Coping strategies can be active (e.g., talking to or confronting the aggressor) or avoidant (e.g., ignoring the cyberbullying or distracting oneself), and may also involve the seeking of social support (e.g., informing someone else or asking for instrumental or emotional support; Heiman et al., 2019;

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Machackova et al., 2013). Some technical solutions have also proven helpful in the short term, such as blocking contact (Machackova et al., 2013; Sittichai & Smith, 2018).

### **Coping effectively with cyberbullying: seeking social support**

Studies analysing coping styles have found that seeking social support is one of the most effective (Chan & Wong, 2017; Cho & Yoo, 2017; Mora-Merchán et al., 2021; Perren et al., 2012). Such coping not only curbs cyberaggressions, but also buffers adverse effects such as depression, anxiety, and lowered self-esteem through the support of others (Machackova et al., 2013; Na et al., 2015; Raskauskas & Huynh, 2015; Völlink et al., 2013; Worsley et al., 2018). Hence, given the usefulness of social support seeking for overcoming the negative consequences of cyberbullying, the purpose of this study was to identify individual and contextual cues that promote the deployment of effective coping strategies, and to determine whether boys and girls differ in this respect.

Although some cyberbullying episodes involve classmates, cybervictimised adolescents prefer to seek help from their parents or peers (Heiman et al., 2019; Paul et al., 2012) rather than teachers (Zhou et al., 2013). However, some cybervictims encounter obstacles in employing effective coping strategies (Crick & Dodge, 1994) and tend to be avoidant (Chen & Zhu, 2021; Navarro et al., 2016). There are several reasons for this, for example, a preference for doing nothing due to fear of parental restrictions on digital device privileges, overconfidence in their own ability to cope (Chen & Zhu, 2021; Jacobs et al., 2015), failure to recognise some forms of cyberaggressions (Jacobs et al., 2015), and even a refusal to accept the negative feelings that result from involvement in these incidents, which may be perceived as unsolvable (Völlink et al., 2013). Thus, in this study, we explored the role of certain socio-emotional factors, as well as perceived parental and peer support, in the propensity of cybervictimised boys and girls to seek social support.

There is a need to further investigate the individual and contextual factors that mediate boys' and girls' use, or non-use, of effective coping styles when experiencing different levels of cybervictimisation (Chan & Wong, 2017; Hellfeldt et al., 2020). Social information processing theory (Crick & Dodge, 1994) indicates that coping involves cognitive, emotional, and social processes, which determine the appropriateness of responses. In the transactional model of Lazarus and Folkman (1986), these processes are dynamic. According to these authors, coping styles should be understood from an ecological and situational perspective, in which the context is a highly relevant factor for modifying and adapting coping strategies (Lazarus, 2006). From this perspective, studying personality traits alone will be insufficient (Bollmer

et al., 2006); we must also pay attention to individual and contextual variables. Lazarus and Folkman (1986) also drew on general systems theory when arguing that coping styles result from different processes and are influenced by stress, management, and adjustment, and depend on causal antecedents, mediating processes, and immediate effects or outcomes. For this reason, our study considers individual socio-emotional and cognitive variables (self-awareness and responsible decision-making), as well as contextual ones (parental and peer support). Our study also considers differences in boys and girls subjected to cyberbullying; girls are more willing than boys to seek social support (Raskauskas & Huynh, 2015). Seeking social support would be particularly beneficial for girls given that they suffer more severe negative consequences of cybervictimisation (Chen, 2020; Ganesini & Brighi, 2015).

### **Individual variables: self-awareness and responsible decision-making**

Regarding the links between coping with cyberbullying and individual variables, where socio-emotional and cognitive variables are particularly important, there is ample evidence that cyberaggressions lead to socio-emotional difficulties. For instance, cybervictimised adolescents, especially girls, may experience loneliness, insecurity, or social anxiety (Eyugoblu et al., 2021; Ganesini & Brighi 2015; Schultze-Krumbholz et al., 2012). Furthermore, according to the theoretical model of victimisation of Bollmer et al. (2006), a lack of emotional regulation and negative affect are significant mediators of individual responses to episodes of cyberbullying. Socio-emotional harms could be embarrassing for adolescents, thus discouraging them from seeking social support and increasing the likelihood of deployment of ineffective coping styles for peer cyberaggressions, such as aggressive coping (Chan & Wong, 2017). In their systematic review, Raskauskas and Huynh (2015) pointed to the need to understand cybervictimised adolescents' appraisals of the attacks that they sustained, their choice of coping strategies, and their self-efficacy in terms of the deployment of more effective responses. Whether awareness of own emotions, thoughts, behaviours, and decisions makes it easier to seek support from parents or peers (Marín-López et al., 2020) should be examined explicitly in both boys and girls. We propose that self-awareness and responsible decision-making would help adolescents recognise peer cyberaggression and consider the benefits of seeking help from other to cope. Additionally, since girls are more resilient, positive, and prosocial than boys, but suffer more severe effects from cybervictimisation (Ganesini & Brighi, 2015), we should examine whether these specific skills, in conjunction with contextual circumstances, help them better cope with this situation.

## Contextual variables: parental and peer support

Regarding the link between coping with cyberbullying and contextual variables (Lazarus & Folkman, 1986), several studies highlight the importance of self-perceived social resources (e.g., parents or peers) with respect to involvement in cyberbullying and the more harmful effects thereof (Cho & Yoo, 2017; Wright, 2018). For instance, Chen (2020) found that girls who have been the victims of cyberbullying are less likely than boys to perceive their parental support level to be low, but are more susceptible to the negative consequences of a deterioration in their relationship with their parents when experiencing cyberbullying.

Social support is often reported as a mediator of the relationships of cybervictimisation with psychological well-being (Hellfeldt et al., 2020) and mental health (i.e., depression and anxiety; Duru & Balkis, 2018). However, whether social support also mediates the relationship between the level of cybervictimisation and propensity to seek support from parents and peers remains to be elucidated. We propose that social support is a determinant of the deployment of effective coping strategies (Chen & Zhu, 2021; Duru & Balkis, 2018; Hellfeldt et al., 2020; Zhang et al., 2019). Specifically, adolescents who perceive that they are supported by their parents or peers may feel more able to actively cope with cyberaggressions and are more likely to report incidents and seek help (Arató et al., 2021; Ciarrochi et al., 2017), as observed in girls (Chen, 2020; Raskauskas & Huynh, 2015).

## Theory and hypotheses

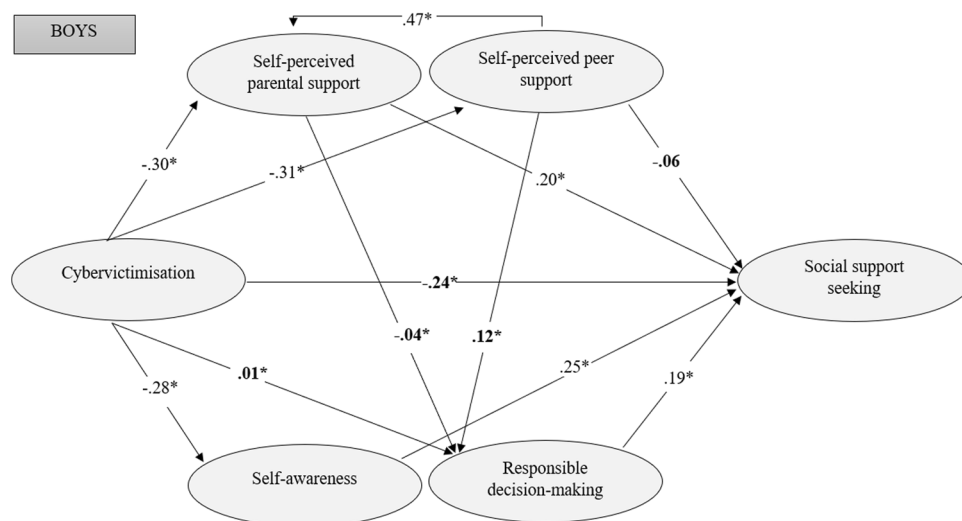
There is clearly a need to encourage the seeking of social support to better cope with cyberaggressions and mitigate their harmful effects. However, to achieve this, it is necessary to identify the individual and contextual variables

associated with the use of this effective coping strategy (Lazarus & Folkman, 1986). Understanding the role of individual and contextual variables in the seeking of social support could empower potential cybervictims to ask for help from others, especially parents and peers. This coping strategy is particularly important considering the uncertainties in the virtual environment (e.g., bystanders are not always close people), and the more negative effects over time in both boys and girls compared to those of “traditional” face-to-face attacks (Smith, 2015). Demonstrating that self-efficacy in the management of emotions, thoughts, behaviours, and decisions, as well as self-perceived parental and peer support, mediates the relationship between the level of cybervictimisation and social support seeking could lead to more effective prevention and intervention measures (Paul et al., 2012). Thus, training related to these socio-emotional and cognitive individual skills, and strengthening social support networks, would help victims of cyberaggressions overcome this negative phenomenon and mitigate its consequences.

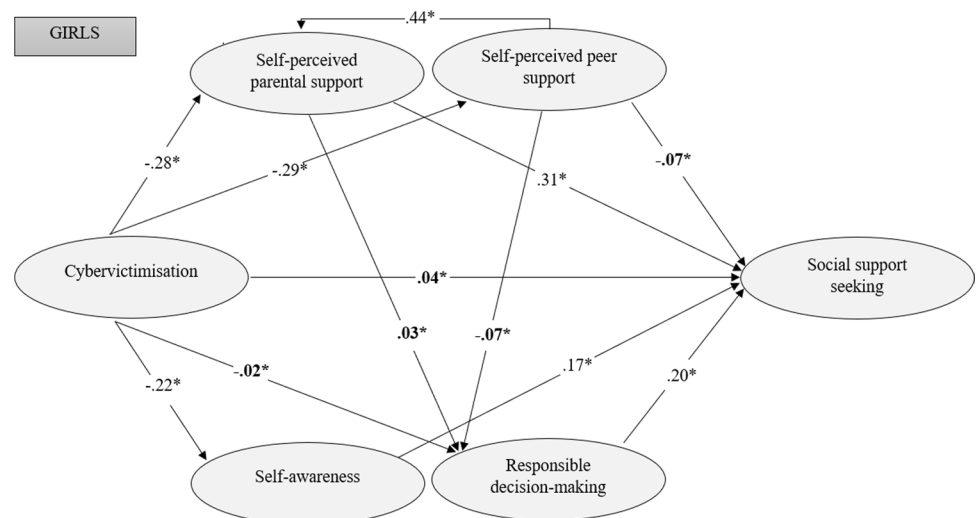
## Current study

In our theoretical model (see Figs. 1 and 2), cybervictimisation was the main predictor, with “self-awareness”, “responsible decision-making”, “self-perceived parental support”, and “self-perceived peer support” included as mediators of the propensity to seek social support as a coping strategy. This study analysed individual variables rarely assessed in relation to the propensity to seek social support to cope with cybervictimisation, i.e., self-awareness and responsible decision-making, and their combination with self-perceived parental and peer support. Advances in our understanding in this area will help clarify why some cybervictims find it easier to ask for help from parents or peers than others selecting less effective coping strategies, such as avoidance

**Fig. 1** Graphical representation of the structural equation model (SEM) for boys. Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$



**Fig. 2** Graphical representation of the structural equation model (SEM) for girls. Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$



(Heiman et al., 2019; Machackova et al., 2013) or aggression (Chan & Wong, 2017). Finally, an analysis according to gender appears important given that, based on the existing literature, girls are more likely than boys to react to cyberaggressions by asking for social support (Chan & Wong, 2017; Raskauskas & Huynh, 2015; Sittichai & Smith, 2018).

This study aimed to: (1) examine whether there is a unique relationship between the level of cybervictimisation and social support seeking, according to gender; and (2) evaluate whether this relationship is fully mediated by self-awareness, responsible decision-making, and self-perceived parental and peer support in both boys and girls. To address these objectives, we devised the following hypotheses: (H1) there is a direct relationship between the level of cybervictimisation and social support seeking, especially for girls; and (H2) when self-awareness, responsible decision-making, and self-perceived parental and peer support levels are high, boys and girls are more likely to seek social support.

## Methods

### Participants

This cross-sectional study enrolled 1,276 secondary school students (boys, 51.2%; girls, 48.8%) aged 11–18 years ( $M = 13.88$ ,  $SD = 1.42$ ). We recruited participants from five secondary schools in southern Spain (grades 7–10). Of the enrolled students, 27.7% were in the 7th grade, 27.4% were in the 8th grade, 19.6% were in the 9th grade, and 25.3% were in the 10th grade. Regarding country of birth, 92.8% of the adolescents were Spanish with Spanish parents, 5.7% were Spanish with migrant parents, and 1.5% were migrants with migrant parents. Among the migrants, 50% were from America (3.3% were from the US, 46.7% were from South

America), 31.6% from another European country, 4% from Africa, and 14.5% from Asia.

Using the online tool developed by Soper (2022), we calculated the required sample size for Student's t-tests and structural equation modelling. In both cases, a statistical power of 0.8 and significance level of 0.05 were the criteria (Cohen, 1988; Westland, 2010). Regarding Student's t-tests, to obtain at least a small effect, it was necessary to recruit a minimum of 506 participants (i.e., 253 per group). For the structural equation modelling, a minimum of 138 participants was required to obtain at least a small effect. However, a sample size of  $\geq 742$  was targeted considering the large number of latent and observed variables in this study.

### Measures

First, we asked participants to provide socio-demographic data, specifically gender, age, years of education, and origin. Then, we presented several items from validated instruments scored using Likert-type scales.

### Independent variable

**Cybervictimisation** To measure cybervictimisation, we used the validated cybervictimisation subscale of the *European Cyberbullying Intervention Project Questionnaire* (ECIP-Q; Del Rey et al., 2015; Ortega-Ruiz et al., 2016). This subscale is composed of 11 items with five response options, ranging from 0 (“Never”) to 4 (“More than once a week”). The items assessed peer cyberaggressions, such as insults, threats, or being the subject of rumours in the last 2 months (e.g., “Someone has threatened me through messages on the internet or social networks”). The internal consistency was good (Cronbach's  $\alpha_{\text{overall}} = 0.80$ ; Cronbach's  $\alpha_{\text{boys}} = 0.82$ ; Cronbach's  $\alpha_{\text{girls}} = 0.83$ ).

## Dependent variable

**Social support seeking** To measure coping with cybervictimisation by seeking social support, we adapted a validated subscale that includes four items with five response options (0 = “Strongly disagree” and 4 = “Strongly agree”). The statements refer to behaviours such as asking for help from a family member or friend to vent emotions and escape a negative situation (Nacimiento & Mora-Merchán, 2014). For example, “I ask a friend to help me actively deal with the problem”. The reliability was acceptable (Cronbach’s  $\alpha_{\text{overall}} = 0.73$ ; Cronbach’s  $\alpha_{\text{boys}} = 0.75$ ; Cronbach’s  $\alpha_{\text{girls}} = 0.69$ ).

## Mediating variables

**Self-awareness** To measure self-awareness, we used a subscale from the *Social-Emotional Competence Questionnaire* (SEC-Q; Zhou & Ee, 2012). This subscale comprises five items with five response options, ranging from 0 (“Not at all”) to 4 (“Completely true”). The items refer to abilities such as recognising of one’s own emotions, thoughts, and behaviours, and understanding the reasons for their occurrence (e.g., “I know what I am thinking and doing”). The reliability was acceptable (Cronbach’s  $\alpha_{\text{overall}} = .75$ ; Cronbach’s  $\alpha_{\text{boys}} = .76$ ; Cronbach’s  $\alpha_{\text{girls}} = .71$ ).

**Responsible decision-making** To assess responsible decision-making, we used a subscale from the SEC-Q (Zhou & Ee, 2012). This subscale comprises five items with five response options, ranging from 0 (“Not at all”) to 4 (“Completely true”). The items refer to behaviours such as considering the consequences of one’s actions, assessing the advantages and drawbacks of a situation, and evaluating recommendations (e.g., “When I make a decision, I make sure it is the best one”). The reliability was good (Cronbach’s  $\alpha_{\text{overall}} = 0.86$ ; Cronbach’s  $\alpha_{\text{boys}} = 0.86$ ; Cronbach’s  $\alpha_{\text{girls}} = 0.85$ ).

**Parental support** To identify the self-perceived level of parental support, we used the validated parental support subscale of the *Multidimensional Scale of Perceived Social Support* (MSPSS; Zimet et al., 1988, 2016). This subscale consists of four items with seven response options (1 = “Very strongly disagree”, 7 = “Very strongly agree”). The items concern emotional support and the help available to resolve problems and make decisions (e.g., “My family is willing to help me make decisions”). The internal consistency was good (Cronbach’s  $\alpha_{\text{overall}} = 0.91$ ; Cronbach’s  $\alpha_{\text{boys}} = 0.88$ ; Cronbach’s  $\alpha_{\text{girls}} = 0.93$ ).

**Peer support** To quantify the self-perceived level of peer support, we used the validated peer support subscale of the

MSPSS (Zimet et al., 1988, 2016). This subscale consists of four items with seven response options (1 = “Very strongly disagree”, 7 = “Very strongly agree”). The items refer to companionship and the help available to deal with various difficulties (e.g., “I can count on my friends when things go wrong”). The internal consistency was good (Cronbach’s  $\alpha_{\text{overall}} = 0.93$ ; Cronbach’s  $\alpha_{\text{boys}} = 0.92$ ; Cronbach’s  $\alpha_{\text{girls}} = 0.91$ ).

## Procedure

Before collecting the data, we obtained approval from the Andalusian Biomedical Research Coordinating Committee (1223-N-18). To conduct a cross-sectional study using a convenience sample, we then contacted the management teams of five secondary schools in the Andalusia region (Spain) by telephone and invited them to participate in the study. In accordance with the convenience sample approach (Etikan et al., 2016), we included secondary schools that met specific practical criteria, especially in terms of their availability and willingness to participate. We then sought consent from parents or legal guardians to recruit adolescents to the study.

The school management teams proposed that this study be considered as part of the Coexistence Plan (a series of measures related to the school climate, implemented at the whole school level); all of the participating families agreed with this. Authorised students received instructions on how to complete the paper-and-pencil survey. Specifically, we informed them in advance about the voluntary, anonymous and confidential nature of the research, their right to withdraw at any time, and the importance of answering all questions honestly. The survey took approximately 15–20 min to complete and was supervised by teaching staff and the research team. According to the cross-sectional nature of this study, we did not control for student non-attendance on the day of the survey.

## Data analyses

After coding and recoding the data in SPSS software – version 26.0; IBM Corp., Armonk, NY, USA – (the dataset is available on the Open Science Framework: [https://osf.io/hfq8w/?view\\_only=bca2c091c7ec471eb84e04a518a352ed](https://osf.io/hfq8w/?view_only=bca2c091c7ec471eb84e04a518a352ed)), and before conducting the primary analyses, we generated descriptive statistics (means and standard deviations) for all of the study variables (Table 1), for both the overall sample and boy and girl subsamples. Then, we assessed the structural validity and reliability of continuous variables using fit indices and Cronbach’s  $\alpha$  coefficients, respectively.

Next, we used Student’s t-means to examine possible differences between boys and girls. Specifically, we examined the levels of cybervictimisation, self-awareness, responsible

**Table 1** Results of descriptive analyses and student’s t-tests by gender

	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Cybervictimisation, <i>X</i>	0.26	0.47	Boys	0.26	0.47	−0.05	0.96	0.00
			Girls	0.26	0.47			
Social support seeking, <i>Y</i>	2.51	1.06	Boys	2.37	1.10	−4.88	0.00***	0.28
			Girls	2.66	0.99			
Self-awareness	2.94	0.76	Boys	2.99	0.79	1.94	0.05	−0.12
			Girls	2.90	0.72			
Responsible decision-making	2.65	0.94	Boys	2.62	0.95	−1.12	0.26	0.06
			Girls	2.68	0.93			
Parental support	4.94	1.34	Boys	5.03	1.25	2.27	0.02*	−0.12
			Girls	4.86	1.43			
Peer support	5.08	1.20	Boys	4.98	1.26	−3.17	0.00***	−0.18
			Girls	5.19	1.13			

Statistically significant differences \**p* < .05, \*\**p* < .01, \*\*\**p* < .001

decision-making, self-perceived parental support, self-perceived peer support, and social support seeking. Following Cohen’s principles (1988, p. 82), we measured effect sizes with Cohen’s *d*-index; 0.2 was considered as a small effect, 0.5 as a medium effect and > 0.8 as a significant effect.

We tested whether the assumption of a normal data distribution was met (Mardia, 1970). The Mardia’s multivariate skewness and kurtosis values were extremely high in both the boy [normalised estimate: 230.4, Mardia’s coefficient (GP,2): 971.2] and girl subsamples [normalised estimate: 164.7, Mardia’s coefficient (GP,2): 704.4]. Given the non-normal distribution of the sample, we decided to carry out bivariate correlations using Spearman’s correlation test, distinguishing between boys and girls (Table 2). Then, we tested for multicollinearity by checking the tolerance indices and variance inflation factor (VIF; Hair et al., 1999). The tolerance indices ranged from 0.65 to 0.94, so multicollinearity did not explain > 10% of the variance in any case. No VIF value exceeded 1.5, suggesting moderate but acceptable correlations, i.e., that multicollinearity was not a serious problem. As recommended by Grewal et al. (2004), we also took into account three factors to mitigate any potential linear dependence between the explanatory variables: the

adequacy of the sample size (where a large sample is preferable), reliability (i.e., ≥ 0.80) and variance explained (where 25 is not sufficient).

To meet the study objectives, we constructed two structural equation models (SEMs) using EQS software (version 6.4; Bentler, 2006). This type of analysis considers measurement error and corrects paths for attenuation (Grewal et al., 2004). We aimed to evaluate model fit and identify direct and indirect paths between the variables of interest. First, we built a model without potential mediators. We tested the direct relationship between the level of cybervictimisation (*X*) and social support seeking (*Y*) separately for boys and girls. We included latent variables, and considered observed variables and individual items (see Measures section). Second, we built another model and examined the mediating roles of self-awareness, responsible decision-making, self-perceived parental support, and self-perceived peer support, for both boys and girls, with consideration of the possible interactions between mediators.

We applied the robust maximum likelihood method to estimate the SEMs (Bollen, 1989; Byrne, 2001; Flora & Curran, 2004). First, we checked the fit of the boys’ and girls’ SEMs using the following indices: the Satorra-Bentler

**Table 2** Bivariate correlations of the independent variable, mediators and covariates with the dependent variable according to gender

Variable	1	2	3	4	5	6
1. Cybervictimisation, <i>X</i>	-	−0.139**	−0.213**	−0.146*	−0.197**	−0.100**
2. Social support seeking, <i>Y</i>	−0.157**	-	0.283**	0.289**	0.317**	0.250**
3. Self-awareness	−0.153**	0.264**	-	0.545**	0.188**	0.246**
4. Responsible decision-making	−0.128**	0.304**	0.562**	-	0.171**	0.189**
5. Parental support	−0.205**	0.274**	0.284**	0.220**	-	0.378**
6. Peer support	−0.085*	0.286**	0.262**	0.259**	0.479**	-

Values are zero-order Spearman correlation coefficients

Values for boys and girls are in the lower and upper triangles, respectively

\**p* < .05, \*\**p* < .01, \*\*\**p* < .001

scaled chi-square ( $\chi^2$ S-B; Satorra & Bentler, 2001); comparative fit index (CFI) and non-normal fit index (NNFI; in both cases  $\geq 0.90$  is adequate and  $\geq 0.95$  is optimal); and the root mean square error of approximation (RMSEA) and root mean square residual (SRMR; in both cases  $\leq 0.08$  is adequate and  $\leq 0.05$  is optimal; Hu & Bentler, 1999). Second, we verified that some cases were excluded from both the boys' and girls' SEM due to missing values. Specifically, 133 cases were omitted from the subsample of boys ( $n=653$ ) and 118 were omitted from the subsample of girls ( $n=623$ ). For this reason, our final sample for these analyses consisted of 1,025 participants. Then, we performed Little's missing completely at random (MCAR) test to verify whether the missing data were randomly distributed (Little, 1988). The results showed that the data were not missing entirely at random ( $\chi^2=231.32$ ;  $df=158$ ;  $p<.001$ ). However, the analysis met Bollen's (1989) criteria regarding the sensitivity of the sample size; the normalised  $\chi^2$  value was low ( $\chi^2/df=1.46$ ), suggesting that the values were missing at random (MAR).

## Results

### Descriptive statistics, comparison of means and bivariate correlations of study variables according to gender

Table 1 reports the means and standard deviations of the continuous variables, and the results of the Student's t-means comparison between boys and girls. As shown in Table 1, there were significant gender differences in social support seeking [ $t(1,276)=-4.88$ ,  $p<.001$ ], self-perceived parental support [ $t(1,276)=2.27$ ,  $p=.020$ ] and self-perceived peer support [ $t(1,276)=-3.17$ ,  $p<.001$ ]. Specifically, boys sought slightly less social support than girls ( $M_{\text{boys}}=2.37$  vs.  $M_{\text{girls}}=2.66$ ), girls perceived that they had slightly less parental support than boys ( $M_{\text{girls}}=4.86$  vs.  $M_{\text{boys}}=5.03$ ) and boys perceived that they had slightly less peer support than girls ( $M_{\text{boys}}=4.98$  vs.  $M_{\text{girls}}=5.19$ ).

Table 2 includes the coefficients of the Spearman's bivariate correlations between the variables of interest in this study, for both boys and girls. All variables showed significant correlations. Specifically, for both boys and girls, the independent variable, cybervictimisation, was negatively associated with the dependent variable (i.e., social support seeking) and the mediating variables (self-awareness, responsible decision-making, and self-perceived parental and peer support).

In boys, the bivariate analyses revealed that the correlations were positive and extraordinarily strong between self-awareness and responsible decision-making ( $r_{\text{boys}}=0.52$ ,  $p<.01$ ), self-perceived parental support and self-perceived

peer support ( $r_{\text{boys}}=0.48$ ,  $p<.01$ ), and responsible decision-making and social support seeking ( $r_{\text{boys}}=0.30$ ,  $p<.01$ ). In girls, the bivariate analyses revealed that the correlations were positive and extraordinarily strong between self-awareness and responsible decision-making ( $r_{\text{girls}}=0.55$ ,  $p<.01$ ), self-perceived parental support and self-perceived peer support ( $r_{\text{girls}}=0.38$ ,  $p<.01$ ), and self-perceived parental support and social support seeking ( $r_{\text{girls}}=0.32$ ,  $p<.01$ ).

### SEM analyses of boys and girls

SEM analyses explored the fit indices of the simple and mediation models.

#### Direct relationship between cybervictimisation and social support seeking

To address the first objective, we constructed a SEM including only the direct relationship between the level of cybervictimisation and social support seeking. The fit indices were not acceptable for boys ( $\chi^2$ S-B = 230.62;  $p<.001$ ; RMSEA = 0.05; SRMR = 0.08; CFI = 0.47; NNFI = 0.36) or girls ( $\chi^2$ S-B = 255.39;  $p<.001$ ; RMSEA = 0.06; SRMR = 0.09; CFI = 0.07; NNFI = 0.66), especially because CFI and NNFI were  $<0.90$ . The results did not support the first hypothesis in either the boys or girls (H1).

#### Mediational model: self-awareness, responsible decision-making, parental support, and peer support

To address the second objective, another SEM was tested including all four mediating variables (see Figs. 1 and 2).

Regarding the boys' final model, the maximum likelihood fit indices did not indicate an acceptable solution ( $\chi^2$ S-B = 881.68;  $p<.001$ ; RMSEA = 0.04; SRMR = 0.07; CFI = 0.85; NNFI = 0.83) because the CFI and NNFI were  $<0.90$ . This model with path coefficients is shown in Fig. 1.

Regarding the girls' final model, the maximum likelihood fit indices indicated a good fit ( $\chi^2$ S-B = 828.62;  $p<.001$ ; RMSEA = 0.04; SRMR = 0.06; CFI = 0.91; NNFI = 0.90). The RMSEA value was classified as optimal ( $\leq 0.05$ ), and the SRMR ( $\leq 0.08$ ), CFI and NNFI (both  $\geq 0.90$ ) values as adequate. The independent variables (i.e., cybervictimisation, self-awareness, responsible decision-making, and self-perceived parental and peer support) explained 43% of the variance ( $R^2=0.434$ ) in the dependent variable (i.e., social support seeking). This model with path coefficients is shown in Fig. 2.

Regarding the direct associations, cybervictimisation was slightly positively associated with social support seeking for girls ( $\beta_{\text{girls}}=0.04$  vs.  $\beta_{\text{boys}}=-0.24$ ). These results partially support our first hypothesis (H1), but only for girls. In addition, cybervictimisation was highly negatively associated

with self-perceived peer support ( $\beta = -0.29$ ), followed by self-perceived parental support ( $\beta = -0.28$ ) and self-awareness ( $\beta = -0.22$ ), and was slightly negatively associated with responsible decision-making ( $\beta = -0.02$ ).

Regarding the indirect associations, the path coefficients in the model for girls demonstrated that self-perceived parental support was highly positively associated with social support seeking ( $\beta = 0.31$ ), followed by responsible decision-making ( $\beta = 0.20$ ) and self-awareness ( $\beta = 0.17$ ). In contrast, self-perceived peer support was slightly negatively associated with social support seeking ( $\beta = -0.07$ ).

These results partially confirm our second hypothesis (H2); most paths were positive and significant, but only in the girls' model. In other words, for girls, it appears that the association between the main independent variable (i.e., cybervictimisation) and the dependent one (i.e., social support seeking) was mediated by three out of the four factors (i.e., self-perceived parental support, responsible decision-making, and self-awareness), thus confirming that the indirect association between cybervictimisation and social support seeking is much stronger than the direct one.

## Discussion

The main purpose of this study was to examine whether cybervictimisation is directly or indirectly associated with social support seeking, as mediated by self-awareness, responsible decision-making, and self-perceived parental and peer support, according to gender.

### General discussion

Our first hypothesis asserts that there is a direct association between the level of cybervictimisation and social support seeking. The results of our study suggest that these variables are directly associated in the case of girls, but not in the case of boys, thus partially supporting the first hypothesis. This is reinforced by the significantly higher scores for this coping style observed for girls. In line with this, we believe that girls may be more able to perceive the serious nature of cyberbullying, where they seek help from a family member, friend, or professional worker (e.g., teacher or psychologist) more often than boys (Chan & Wong, 2017). Furthermore, Sittichai and Smith (2018) noted that, when dealing with cybervictimisation, girls favour reporting it, while boys favour retaliation and making new friends. However, we must consider that, in our model for girls, the direct association between cybervictimisation and social support seeking was not strong; this fact is important because it could indicate that, for girls, as well as the intention or willingness to seek social support (Raskauskas & Huynh, 2015) a good balance between certain socio-emotional competencies (e.g.,

emotion regulation) and environmental circumstances (e.g., social support; Crick & Dodge, 1994; Smith, 2015) is necessary. This may explain why the simple model showed a poor fit, which was improved by adding individual and contextual variables as mediating factors.

Our second hypothesis asserts that self-awareness, responsible decision-making, and self-perceived parental and peer support might contribute to the likelihood of social support seeking. The results of our final SEM further highlight the relevance of socio-emotional development and the parental relationship in the evolution of cybervictimisation, but only in girls, thus partially confirming this hypothesis. One possible explanation for this relates to the differential effects of cybervictimisation according to gender (Brown et al., 2014; Campbell et al., 2012). Previous studies have shown that boys react aggressively to being cyberbullied by their peers (Sittichai & Smith, 2018). In contrast, girls tend to experience feelings of loneliness and sadness (Schultze-Krumbholz et al., 2012). Thus, the different responses of boys and girls involved in cyberbullying could explain why girls seek social support more often than boys, and why this coping style is more effective for them than it is for boys. In other words, the results of this research reinforce the notion that girls are more likely to use socio-emotional and environmental resources to alleviate unpleasant emotions caused by cyberbullying episodes, such as loneliness or sadness (Giménez-Gualdo et al., 2015) and more severe effects, such as anxiety or depression (Hellfeldt et al., 2020). Additionally, we argue that, in boys, other factors are more salient in terms of whether they seek social support or not. For example, boys may tend to seek less social support than girls because they are more susceptible to peer pressure (Gao et al., 2021) and prioritise popularity within their peer group (Cillessen et al., 2014), thus avoiding taking any action that puts their social status at risk.

Regarding individual factors, our study indicates that responsible decision-making, followed by self-awareness, is crucial for girls who may experience cyberbullying in terms of seeking socio-emotional help (Chan & Wong, 2017). However, the literature on cyberbullying indicates that negative emotions are the most common consequence of victimisation (Na et al., 2015; Raskauskas & Huynh, 2015; Worsley et al., 2018). Involvement in cybervictimisation leads to a deterioration of personal skills, especially for girls (Hellfeldt et al., 2020); in turn, this undermines the ability of cybervictims to make their own decisions (Gao et al., 2021) or seek support in the family, school, or social domain (Cross et al., 2015). Therefore, direct action by the family or school is necessary to ensure that cybervictims have the emotional and cognitive competencies to seek social support, i.e., to prioritise their psychological well-being in the face of cyberaggressions (Völlink et al., 2013). Specifically, parents could help girls who are



cybervictims to not feel alone or unprotected (e.g., through gestures of warmth, concern, availability, or communication) and provide them with strategies to manage stress and other negative psychological effects (Baldry et al., 2019; Chen, 2020; Zhou & Ee, 2012). Through training in this coping style, cybervictimised girls could learn to stop normalising the harm that they suffer by paying attention to their emotions, thoughts, behaviours, and decisions. According to Chan and Wong (2017), such supportive gestures improve cybervictims' self-esteem, which helps prevent future cybervictimisation (Chen & Zhu, 2021).

Regarding contextual factors, our study corroborates that self-perceived parental support is the only factor associated with the use of effective coping in girls, that is, social support seeking in their quotidian environment (Chen & Zhu, 2021; Zhang et al., 2019). Several studies highlight "parental support" as one of the main protective factors against cyberbullying (Baldry et al., 2019; Oldfield et al., 2015). This finding contrasts with another one of our results; girls had lower mean of self-perceived parental support than boys, and even self-perceived peer support. We can assume that the roles of parents, caregivers and legal guardians differ between boys and girls, which is particularly important when considering complex cyberaggressions on the internet and virtual social networks. For example, the dissemination of personal information or identity theft (Smith, 2015) would be challenging circumstances to deal with on one's own.

Surprisingly, self-perceived peer support showed a significant negative association with seeking social support, which was not the case for self-perceived parental support. From this perspective, self-perceived peer support does not seem to be associated with cybervictimised girls reporting their situation to parents, friends, teachers, or psychologists. However, this could be explained by two critical social aspects. First, we know that girls tend to experience high levels of peer support (Chen, 2020; Hellfeldt et al., 2020), so may be satisfied with the support that they already receive; indeed, in our study, above-average scores for this type of support were seen in girls. Second, we know that cybervictimisation causes a deterioration of social reputation within the peer group (Navarro et al., 2015). For this reason, cybervictimised girls may be afraid of being rejected and losing the support of their peer group altogether if they seek support from others, so may choose not to do so (van den Eijnden et al., 2014). Despite this result, we propose that parental and peer support could complement each other, because peers may not perceive cyberbullying as a problem at an early stage or have effective strategies to stop this form of violence, similar to adults (Hellfeldt et al., 2020). Peers could satisfy cybervictims' needs for communication and support, as they are more familiar with their experiences on the internet and social networks, and the importance that they attach to these events. However, for this to happen, it is essential to

achieve comprehensive awareness of cyberbullying among adolescents (Paul et al., 2012).

### Limitations and future research directions

The findings of this study should be interpreted in light of some limitations. First, convenience sampling was used, which restricted our data collection to a single geographical area of Spain. It would be interesting to extend the data collection to other national and international settings, to increase the size and representativeness of the sample, and the generalisability of the results. Second, a cross-sectional study design was used. Hence, our results should be interpreted with caution, without making inferences regarding causality (because they can be erroneous when using cross-sectional data). In our study, we sought to identify the socio-emotional (i.e., self-awareness and responsible decision-making) and environmental circumstances (i.e., self-perceived parental and peer support) under which the likelihood of an association between cybervictimisation and social support seeking is higher. Longitudinal studies are needed to clarify whether the independent variables introduced in our model are causal. Third, self-report measures were used, which may elicit responses based on social desirability, especially in the context of self-assessment of own's socio-emotional and cognitive skills (self-awareness and responsible decision-making, respectively). For this reason, it would be helpful to complement this measurement type with other types, such as direct observation or parental reports.

Future research on cybervictimisation and social support seeking should address certain topics to improve our understanding of the association of these variables. Specifically, we propose the following: (1) to test whether the mediating roles of self-awareness, responsible decision-making, and self-perceived parental and peer support remains equally crucial over time (e.g., individual versus contextual, or vice versa); (2) to analyse the role of these and other factors in the propensity to seek social support when cybervictimisation is stable or persists over several months (Duru & Balkis, 2018); (3) to extend the investigation to other relevant factors, such as teacher support (Hellfeldt et al., 2020; Smith, 2015), prosociality (Chan & Wong, 2017), resilience (Gianesini & Brighi, 2015) or self-compassion (Chen & Zhu, 2021); and (4) to identify the factors that encourage or discourage boys from seeking social support, such as anger regulation (Gianesini & Brighi, 2015), peer pressure (Gao et al., 2021) and the need to be popular (Cillessen et al., 2014).

### Conclusions and practical implications

Despite its limitations, this research provides substantial new evidence regarding the association of the level of

victimisation and girls' ability to cope by seeking social support during cyberbullying episodes. Our study demonstrates that cybervictimised girls are more likely to use an effective coping style, i.e., to seek social support, when they have self-awareness, make responsible decisions, and receive parental support. In other words, according to the results of our study, girls who suffer from cyberaggressions are more likely to seek emotional or instrumental support when they know how to deal with their emotions, thoughts, behaviours, and decisions, and feel supported by their parents. Certain socio-emotional, cognitive, and environmental conditions must be fulfilled to increase the likelihood that potential cybervictim girls will seek help from others close to them to overcome this adverse situation (Perren et al., 2012). However, cybervictimised girls who perceive that they have peer support may decide not to seek social support if they prioritise belonging to the peer group or are afraid of peer rejection (van den Eijnden et al., 2014). Cybervictimised girls must perceive themselves as capable of admitting to others what is happening to them in the virtual environment and must also feel that they have the trust and understanding of their parents (Jacobs et al., 2015; Völlink et al., 2013). Therefore, it seems very important to improve socio-emotional skills, such as self-awareness and responsible decision-making, as well as to strengthen parental bonds, to promote effective coping with cyberbullying.

The findings of this research make an important contribution to our understanding of strategies for coping with cyberbullying. Until now, the joint role of individual and contextual variables in the decision to seek social support, especially among girls, who are the more likely to be cybervictims (Machackova et al., 2013) and are more negatively affected (Hellfeldt et al., 2020), was poorly understood. Our study reveals that there is a need to study coping with cyberbullying with consideration of both individual and contextual factors, to better understand why some cybervictimised girls are more likely than others to implement effective strategies (Raskauskas & Huynh, 2015). For instance, cultural differences appear to partially influence the choice of more individualistic or collectivist coping styles (Hu et al., 2018).

This study has notable implications for practice, especially for educational institutions and families. Our study highlights the importance of socio-emotional and cognitive skills, as well as parental dynamics, in girls' perceptions of the benefits of help-seeking (Arató et al., 2021; Chan & Wong, 2015; Duru & Balkis, 2018; Heiman et al., 2019; Wright, 2018). Moreover, the findings show that there is a need to raise awareness of how to detect cyberbullying, and to actively support cybervictims at the emotional and instrumental levels (Huang et al., 2019; Paul et al., 2012).

In summary, psychoeducational programmes should focus on how to enhance the socio-emotional development of cybervictimised adolescents and establish strong bonds

with parents. In turn, this would help cybervictims, especially girls, recognise that it is possible to overcome this negative situation, especially if they feel well-supported (Chen & Zhu, 2021; Na et al., 2015; Worsley et al., 2018). Given the similarities regarding the difficulty of coping with face-to-face aggression, such interventions could also promote social support seeking among those dealing with school bullying (Chan & Wong, 2017; Mora-Merchán et al., 2021). Such prevention and intervention strategies must be designed and implemented from a whole-school perspective (i.e., in collaboration with parents, students, teachers, and other professionals); cybervictims should be actively supported to enhance emotional and instrumental resources. In conclusion, psychoeducational measures should promote effective coping with cyberbullying, and consider possible gender differences (Chan & Wong, 2015; Perren et al., 2012) to curb this ongoing problem not only in girls, but also in boys (Heiman et al., 2019; Machackova et al., 2013).

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**Data availability** The datasets generated during and/or analysed during the current study are available with Open Science Framework (OSF) in [https://osf.io/hfq8w/?view\\_only=bca2c091c7ec471eb84e04a518a352ed](https://osf.io/hfq8w/?view_only=bca2c091c7ec471eb84e04a518a352ed).

**Code availability** Not applicable

## Declarations

**Ethics approval** The study design was approved by the Andalusian Biomedical Research Coordinating Committee (1223-N-18) before data collection.

**Consent to participate** In five secondary schools, written informed consent was obtained from the parents, and informed consent was

obtained from all authorised individual participants included in the study.

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

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