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Describing Disclosure of Cybervictimization in Adolescents from the United Kingdom: The Role of Age, Gender, Involvement in Cyberbullying, and Time Spent Online

Abstract

Disclosing experiences of cybervictimization is an important first step in many anti-bullying interventions. Gender, age, cybervictimization experiences, cyberbullying behaviors, and time spent online were examined as factors that describe: (a) disclosing cybervictimization and (b) perceptions of helpfulness following disclosure. The sample comprised 750 (384 boys and 365 girls, M_{age} = 12.57 years, SD_{age} = 1.25 years) 11- to 15-year-olds recruited from two schools. Participants completed self-report measures of cybervictimization experiences, cyberbullying behaviors, intent to disclose cybervictimization, who they thought would be helpful following disclosing cybervictimization, and technology use. Over 88% of the sample reported that they would disclose cybervictimization. Girls and those experiencing low levels of cybervictimization reported they would disclose cybervictimization. Those who were older, and girls reported that they thought friends would be helpful following a disclosure of cybervictimization, whereas those who were younger reported that parents and the police would be helpful. A Gaussian graphical model was used to further explore perceptions of helpfulness following disclosure of cybervictimization and highlighted a complex pattern between targets. The findings add to the growing evidence of the complexity around adolescents' propensity to disclose experiences of cybervictimization which has implications for anti-bullying interventions.

Key words: disclosure; help-seeking; cyberbullying; bully; victim; cybervictimization

Describing Disclosure of Cybervictimization in Adolescents from the United Kingdom: The Role of Age, Gender, Involvement in Cyberbullying, and Time Spent Online

The current study examined the factors that influence 11- to 15-year-olds' propensity to disclose cybervictimization and their perceptions of who they thought would be helpful following a disclosure of cybervictimization. Cyberbullying is an: "(a) intentional aggressive behavior that is, (b) carried out repeatedly, (c) occurs between a perpetrator and victim who are unequal in power, and (d) occurs through electronic technologies" (Kowalski et al., 2014, p. 1073). There is significant variation in prevalence rates of experiencing cybervictimization (from 3.0%-81.1%), engaging in cyberbullying behaviors (from 0%-79.3%), and bully/victim experiences (from 1.4%-25.7%; Kowalski et al., 2014). Given the high prevalence rates, and the potentially severe consequences associated with involvement in cyberbullying (Carvalho et al., 2021; Nixon, 2014), there has been a focus on developing effective anti-cyberbullying interventions. In a systematic review of 17 such interventions, the most frequent topics addressed were digital citizenship; coping skills; education, communication and social skills; and empathy (Hutson, Kelly, & Militello, 2018). The current study examined: (a) the factors that described adolescents' propensity to disclose cybervictimization, (b) whether there was variation in the factors that described who the adolescents perceived to be helpful following a disclosure of cybervictimization, and (c) the reason why adolescents did not disclose cybervictimization.

To support those who experience bullying, there is a tacit understanding that individuals must disclose their experiences (Boulton et al., 2013); however, 90% of 12- to 17-year-olds reported they would not disclose cybervictimization to adults (Juvonen & Gross, 2008). This lack of disclosure conflicts with the general advice provided in schools that children and young people should disclose experiences of cybervictimization to an appropriate adult (Bjereld, 2018) and potentially undermines the effectiveness of anti-cyberbullying

interventions (Boulton et al., 2013). Consequently, Boulton et al. argue the necessity of understanding the factors that influence children's propensity to disclose bullying in order to underpin effective anti-bullying interventions. However, disclosure is not equivalent to seeking help, as some children and adolescents may disclose experiences yet not seek help.

Although Boulton et al. (2013) advocate disclosing experiences of bullying, recent research suggests that it is important to consider who disclosures are made to. Blomqvist et al. (2020) reported that 55.4% of their sample of Finnish students from grades 4-6 and 8-9 would tell someone about their experiences of victimization. However, there was variation in who the participants said they would tell, with many of the sample telling more than one person. Telling someone at home (34.0%) and a friend (32.3%) about the victimization were the most frequently endorsed targets of disclosure with telling a teacher (20.6%), some other adult (12.7%), or a sibling (12.0%) less likely disclosure targets. Complementing the recent evidence from Blomqvist et al. (2020), Buhrmester and Prager (1995) maintain it is important to consider the target of disclosures and their perceived helpfulness for three reasons. First, the level of social support and provisions that can be offered may vary according to target and, as such, this may influence judgements about who may best provide support. Second, norms exist around the opportunities for disclosure such that there are normative expectations about the appropriateness of disclosures to different targets. Third, previous experiences with the target provides information about how the disclosure will be received. Similarly, Matsunaga (2010) argues that it is necessary to consider the target of a disclosure because of unique relationship dynamics, with disclosures to peers likely to differ in interpersonal concern compared to disclosure to parents or teachers.

Consequently, adolescents who experience cybervictimization may make judgements about how helpful potential targets will be if they disclose cybervictimization experiences. However, the previous research exploring disclosure of cybervictimization and perceptions of

helpfulness following disclosure has not distinguished between specific individuals but rather created categories as to whether the disclosure of cyberbullying was made to informal or formal sources of support (Pereira et al., 2016) or focused only on telling officials at school about cyberbullying (Addington, 2013). Therefore, as well as exploring general disclosure of cybervictimization, the current study also explored adolescents' perceptions of the helpfulness of different targets following disclosure of cybervictimization for friends, parents, teachers, head teachers, and the school nurse. The police were included as a target because previous research has highlighted them as a legitimate authority to report cyberbullying to (Addington, 2013).

The general aggression model (Anderson & Bushman, 2002) provides a theoretical account of the individual and situational factors that contribute to the social, cognitive, and behavioral outcomes associated with aggression. Focusing on cyberbullying, Kowalski et al. (2014) proposed that individual factors relate to characteristics such as gender and age that make individuals susceptible to cybervictimization. Situational factors relate to how technology can be used to act aggressively. Girls and those in 7th to 10th grade are most at risk of cybervictimization (Kowalski et al., 2014). Drawing on the general aggression model, it is therefore important to consider the individual and situational factors that may influence disclosure of cybervictimization.

Linking gender and age to the propensity to disclose cybervictimization, previous research has reported that girls (Addington, 2013; Pereira et al., 2016) and younger adolescents (Pereira et al., 2016) were more likely to seek support following cybervictimization compared to boys and older adolescents. Specifically, Addington (2013) reported that girls were 1.98 times more likely to report cybervictimization to a teacher or other school adult compared to boys. Whereas Pereira et al. (2016) reported that adolescents were more likely to seek support from their relatives and friends following

cybervictimization. More recently, Pabian (2019) reported variation in who support was sought from following cybervictimization; of those adolescents who sought support they most frequently relied on friends, parents, and teachers. Drawing from research on disclosing experiences of face-to-face bullying, Blomqvist et al. (2020) argue that older adolescents may be less likely to disclose victimization compared to younger adolescents because of their need for increased autonomy. Further, differences in developmental trajectories of self-disclosure exist (Buhrmester & Prager, 1995), providing additional justification to explore the role of age and gender in adolescents' disclosure of cybervictimization: It was predicted that:

H1: Girls and younger adolescents will be more likely to disclosure cybervictimization

Perceptions of helpfulness following a disclosure of cybervictimization may vary according to the target of disclosure because during adolescence friends and peers become more important sources of support (Nickerson & Nagle, 2005) but peers are not always regarded as effective sources of support to manage cyberbullying (Holfeld & Grabe, 2012). Therefore, exploratory analysis was undertaken to explore the relationships between gender, age, and perceptions of helpfulness following disclosure of cybervictimization according to target, without direct predictions made:

H2: Gender and age will be associated with variation in perceptions of helpfulness following disclosure of cybervictimization according to target

Although disclosing experiences of bullying is regarded as an effective coping strategy (Matsunaga, 2010), research has identified a mixed pattern of results concerning previous involvement in cyberbullying and the propensity to disclose future cybervictimization. For example, on the one hand some research suggests that experiencing cybervictimization reduces the propensity to disclose cybervictimization (Gustainiene & Valiune, 2015) whereas other studies have reported that repeated cybervictimization predicts disclosure (Addington, 2013). Research focusing on face-to-face bullying has reported that children who experience

face-to-face victimisation and who disclosed their experiences reported that disclosure was the most appropriate strategy to reduce the bullying (Hunter et al., 2004) and a way to feel better and retaliate against the bully (Dowling & Carey, 2013). Together these studies suggest that for face-to-face bullying, the goals associated with the disclosure were important factors in facilitating disclosure. However, more recently, Kaiser et al. (2020) reported that adolescents who had experienced cybervictimization did not engage in more help-seeking behaviour. Furthermore, this pattern was not replicated for face-to-face bullying (where experiencing face-to-face victimization increased help-seeking behaviour). Therefore, it seems that some young people may disclose cybervictimization experiences if they have previously experienced cybervictimization whereas some young people do not disclose.

There are four potential reasons for this disparity relating to why those who have previously experienced cybervictimization may not disclose their experiences. First, similar to face-to-face bullying (deLara, 2012), adolescents may try to self-manage cyberbullying. One example of trying to self-manage cyberbullying is those adolescents who simultaneously fulfil the bully/victim role may be less likely to disclose cybervictimization because they potentially engage in cyberbullying to retaliate against their experiences (König et al., 2010). Second, drawing on research focusing on reasons for not disclosing bullying, one potential reason is concern over adult reactions to disclosure (deLara, 2012). When applied to cybervictimization this may translate in to concerns around maintaining access to digital technology. For example, adolescents who spend a significant amount of time engaging with digital technology may fear losing their access to the technology if they disclose cyberbullying (Mishna et al., 2009). Third, adolescents may be failing to disclose experiences of cybervictimization because of self- and other-protection. Focusing on self-protection, a disclosure may not be made because adolescents fear that once they disclose their experiences, the information will be uncontrollable, or that following a disclosure their social

identity as someone who can meet their needs on their own will be altered (Matsunaga, 2010). Considering other-protection, adolescents may not disclose their experiences because of a concern about the impact that the disclosure would have on others (Matsunaga, 2010). Finally, drawing on research exploring disclosure following face-to-face bullying (deLara, 2012), it is possible that adolescents may not disclose experiences of cybervictimization because they perceive such behavior as normative and, as such, others do not need to be made aware of the situation. Therefore, in the current study, the role of involvement in cyberbullying as a victim and bully in relation to disclosure of cybervictimization will be explored:

H3: Experiences of cybervictimization and cyberbullying will be associated with disclosure of cybervictimization

H4: Experiences of cybervictimization and cyberbullying will be associated with variation in perceptions of helpfulness following disclosure of cybervictimization according to target.

These analyses were exploratory in nature as predictions about the nature of the relationships were not made in the current study because previous research has highlighted differences in help-seeking (e.g., Kaiser et al., 2020) and disclosure (Gustainiene & Valiune, 2015) following victimization. Finally, given the complexity around disclosure of cybervictimization, the reason why adolescents decide not to disclose experiences of cybervictimization will also be explored.

Method

As described in Authors (2017), we used the methodology outlined below.

Participants

Nine secondary schools, selected at random, from the East Midlands in the UK were approached to take part. Two schools for 11- to 18-year-olds agreed: one private school with

over 1000 students and one public school with 2000 students. All 11- to -15-year-olds were invited to participate with questionnaires returned by 750 (384 boys, 365 girls, 1 gender not reported) adolescents during 2013 and 2014. Complete data was received from 598 (312 boys and 285 girls, M_{age} = 12.59 years, SD_{age} = 1.26 years) participants (79.73%). There was no significant gender differences in response, $\chi^2(1) = 1.16$, $p = .281$, but participants who completed all items were older (M = 12.59, SD = 1.26) than those who did not (M = 11.99, SD = .90), $t(3.22.13) = 6.71$, $p < .001$. The percentage of missing data ranged from 0% to 12.3% per variable and were not MCAR, $\chi^2(15) = 29.65$, $p = .013$. Multiple imputation with 200 datasets was used to replace missing values through the R package mice (van Buuren & Groothuis-Oudshoorn, 2011). Multiple imputation involves replacing missing values with predictions from a regression model using available data and using multiple imputed datasets created with additional noise to account for the uncertainty in the imputed values. These are then combined in a single analysis (Acock, 2005; Kang, 2013). Fichman and Cummings (2003) modeled the effects of multiple imputation with up to 50% missing data and argued that the results provided clearer insight and were more representative than when such techniques were not used.

Measures

Disclosure of Cybervictimization To assess cybervictimization disclosure, participants indicated "If you were the victim of cyberbullying would you tell someone?" using a *yes*/*no* format. Next participants were provided with the following list: Parents, friends, teachers, head teachers, school nurses, and police officers and asked to indicate using a *yes/no* format all those who they thought would be helpful if they disclosed cyberbullying. Finally, if participants indicated they would not disclose cyberbullying, they had the option to say why.

Cyberbullying Involvement The cybervictimization experiences (CVE) and cyberbullying behaviors (CB) scales (Authors, 2017) assessed cyberbullying involvement during the past

three months. The CVE scale comprises 3 subscales: Threats (6 items, e.g., “Sent me a threatening comment anonymously”, α = .85), sharing images (5 items, e.g., “Shared my photographs without my permission”, α = .89), and personal attack (4 items, e.g., “Called me an offensive nickname”, α = .87). The CB scale comprises 3 subscales: Sharing images (4 items, e.g., “Made a video of someone doing something offensive and shared it without permission”, α = .85), gossip (5 items, e.g., “Forwarded a post with a rumor about someone”, α = .80), and personal attack (3 items, e.g., “Called someone an offensive nickname”, α = .83). Participants responded to the questions for “all types of technology that may be used to communicate with others” using a 6-point scale ranging from *Never* (1) to *Everyday* (6). Items were summed to give separate CVE and CB scores. Over half of the sample (n = 360, 57%) scored above the CVE minimum indicating they had experienced cybervictimization and 30% (n = 187) indicated they had engaged in cyberbullying behaviors.

Technology Use Participants reported, per device, how many hours per day they used mobile telephones, tablets, laptops, desktop computers, and gaming devices during the week and weekend. Scores were aggregated to reflect technology use across various devices and during the weekdays and weekend (*M* = 17.20 hours, *SD* = 14.49).

Procedure

Passive consent procedures were followed with consent for the adolescents’ involvement in the research initially given by the head teachers. Letters outlining the research were sent to parents/guardians of the adolescents who were asked to contact the school if they did not want their child to participate. No parents/guardians opted to withhold consent for the adolescents to participate. Before participating, the adolescents were told that participation was voluntary, they could stop answering the questions at any time, there were no correct answers, all answers were confidential (unless they disclosed a significant risk of harm), and

were asked to give their assent. Paper-based questionnaires were completed during a class session.

Results

Disclosure of Cybervictimization

Most of the sample (*n* = 544, 88.3%) reported they would disclose cybervictimization and some participants who reported experiencing cybervictimization said that they would disclose (*n* = 310) whereas others said they would not (n = 50). Similarly, some participants who engaged in cyberbullying said they would disclose (*n* = 152) but not all (*n* = 35). Most participants reported that only 1 of the targets would be helpful (*n* = 349, 58%), although 21% (*n* = 126) reported that they thought 2 of the targets would be helpful following disclosure with parents (*n* = 422, 64%) and friends (*n* = 253, 38%) most frequently selected. A small proportion of participants reported that they believed all targets would be helpful (*n* = 19, 3%).

Logistic regression was used to examine whether gender, age, time spent online, CVE scores, and CB scores described: (a) general disclosure of cybervictimization (to test H1 and H3) and (b) which targets were identified as being helpful following disclosure (to test H2 and H4; Table 1). Cybervictimization disclosure was described by cybervictimization and gender providing partial support for H1 and H3. Girls and those who experienced less cybervictimization experiences were more likely to report disclosure. Focusing on perceptions of helpfulness following disclosure, those who were younger reported that parents and the police would be helpful whereas girls and older participants thought friends would be helpful providing partial support for H2 and H4. Perceptions of helpfulness following disclosure to school personnel were not described.

[Insert Table 1 here]

Exploring the connections between disclosure and cyberbullying victimization experiences and cyberbullying behaviors subscales

Previous analyses included the aggregated CVE scores and CB scores as predictors. Further analyses were undertaken to explore the connections between the subscales of these measures and the disclosure items. Including all six subscales in the regression model as predictors was largely uninformative owing to multicollinearity between the subscales. For this reason, we adopted the more exploratory approach of investigating the partial correlations between our main predictor variables and perceptions of helpfulness following disclosure using a GGM – a Gaussian graphical model (e.g., see Epskamp & Fried, 2018). This model was estimated using the Bayesian BGGM package in R (Williams & Mulder, 2020a) with the mixed variable type (for combining categorical and continuous predictors). Missing data were imputed using the mice package with 100 imputed data sets. We included all six cyberbullying behaviours and cybervictimization experiences subscales and perceptions of helpfulness following disclosure of cybervictimization as well as the predictors age, gender, and time spend online.

Partial correlations allow the unique connections between variables to be visualized after removing other contributions (Table 2). As well as revealing the pattern of collinearity between predictors it also provides a potentially more nuanced view of the relationships between the variables that could guide future research. Figure 1 shows the network plot of partial correlations between variables with positive relationships in green and negative relationships in orange, with thicker lines representing strong partial correlations.[1]

[Insert Figure 1 here]

[1] To aid interpretability, only edges (links) in the network where the 90% posterior probability interval does not include zero are depicted.

Although it is important to be cautious about interpreting the GGM network plot there are some striking patterns. First the multicollinearity between subscales for cyberbullying behaviours and cybervictimization experiences is evident with all items within each scale having positive partial correlations – with most edges (links) showing weak to moderate relationships (r_p ranging from .124 to .504). Between scales there is a positive relationship (r_p = .377) between the two image subscales – possibly suggesting a reciprocity or retaliation between receiving and sending images. A similar relationship is also evident between the two personal attack subscales (r_p = .212), again suggestive of reciprocity or retaliation between receiving and making personal attacks. Cybervictimization experiences for threat (r_p = .197) and image (r_p = .190), but not personal attack, also appear higher for girls than boys. These are also both positively, albeit weakly, related to technology use (r_p = .145 and r_p = .103 respectively).

With the perceptions of helpfulness following disclosure of cybervictimization there are moderate to strong links between which targets were identified as being helpful following a disclosure. Specifically, associations were evident between the various extrafamilial authority figures (i.e., teachers, head teachers, school nurse, and the police; r_p ranging from .422 to .810) but not evidence of unique contributions linking these to disclosure to friend or parent. A negative link was evident between perceptions of helpfulness of parents and friends (r_p = -.332) such that when parents were perceived to be helpful, friends were perceived to be less helpful.

While the regression analyses have shown that the aggregated scales can, to some extent, predict disclosure the GGM does not provide clear evidence of the unique effects of particular subscales predicting perceptions of helpfulness following a disclosure of cybervictimization to the various targets. This may point to the role of other potential mediating variables.

[Insert Table 2 here]

Reasons for Not Disclosing Cyberbullying

The free-text comments provided by those who indicated that they would not disclose (n = 72, 42 girls and 30 boys, M_{age} = 12.94 years, SD_{age} = 1.29 years) were explored using inductive content analysis. This subsample experience relatively high levels of cybervictimization (M = 22.99, SD = 9.52) and engage in low levels of cyberbullying (M = 16.32, SD = 5.08).

As recommended by Kyngäs (2020), the inductive content analysis involved the following phases: (a) data reduction, (b) data grouping, and (c) formation of concepts with the similarities and differences in the responses captured in the emerging themes (Graneheim et al., 2017). The most frequent reason for non-disclosure was that participants would self-manage the situation (42%, e.g., *"because I think I could handle it on my own"*, boy, aged 12). The remaining responses contained a variety of reasons for non-disclosure including embarrassment (14%, e.g., "*because it would be embarrassing telling people you get bullied and the bully would kill you for snitching*", boy, aged 13), concern what others would think (11%, e.g., "*because I would feel judged*", girl, aged 14), fear that disclosure would exacerbate the situation (11% e.g., "it might get worse, girl, aged 12), and a belief that others would not help (10%, e.g., "*nobody would do anything about it"*, boy, aged 14).

Discussion

Most of the sample (88%) reported they would disclose cybervictimization, with variation occurring in the factors that described disclosure and who the adolescents thought would be helpful following disclosure. The proportion of the sample reporting they would disclose cybervictimization was a far higher than that reported by Juvonen and Gross (2008). However, in the current study we asked participants whether they would disclose cybervictimization without specifying the target of the disclosure whereas Juvonen and Gross

asked about disclosure to adults. Therefore, the current study's findings could reflect adolescents' propensity to disclose to their peers (Buhrmester & Prager, 1995). However, disclosure is not equivalent to seeking help, as some adolescents may disclose experiences but may not seek help.

A minority of the sample reported that they would not disclosure cybervictimization. The analysis of the free-text responses suggested a range of reasons why adolescents may not disclose; some adolescents were embarrassed and concerned how they would be perceived following a disclosure whereas others believed the situation would be exacerbated or they would not receive help. Therefore, practitioners should consider providing confidential opportunities for disclosure that minimize adolescents' perceptions that they will be judged. Further, finding that 40% of our sample who said that they would not disclose cybervictimization experiences would self-manage cybervictimization has practical implications for anti-bullying interventions. Complementing previous research by Paul et al. (2012), these findings suggest that adolescents frequently adopt an independent approach to manage cyberbullying. The findings of the current study could suggest that many of the sample had benefited from anti-cyberbullying interventions designed to give them the skills to manage cyberbullying (e.g., Cyber Friendly Schools; Cross et al., 2016). Therefore, following the relatively large propensity of those adolescents who would not disclose cybervictimization to suggest self-management as a mechanism of dealing with cybervictimization, practitioners also need to support adolescents in acquiring self-management skills.

Adolescents who experienced greater levels of cybervictimization also reported they would not disclose their experiences, providing partial support for H3. This finding contradicts the advice to disclose victimization to capitalize on anti-bullying initiatives (Boulton et al., 2013). Girls were more likely to say they would disclose cybervictimization

providing partial support for H1. Girls and older adolescents were more likely to report that friends would be helpful following a disclosure of cyberbullying; whereas younger adolescents reported parents and police would be helpful following a disclosure of cybervictimization providing partial support for H2. There are two possible explanations for why older participants may think that disclosing to their friends would be helpful and younger participants may think parents would be helpful. First, during adolescence, with age the relative importance of attachment figures shifts such that friends become more important attachment figures and sources of support especially for girls (Nickerson & Nagle, 2005). Second, research suggests that younger adolescents think their peers would not be effective in reducing cyberbullying (Holfeld & Grabe, 2012).

Experiencing cybervictimization and engaging in cyberbullying, age, gender, and time spent online were not associated with reports that following disclosure school personnel would be helpful providing no support for H2 and H4. Although caution is needed when interpreting these findings because of the small numbers of participants who thought these individuals would be helpful, these finding have implications for the anti-bullying messages that schools promote. Schools should consider promoting a model where adolescents are encouraged to disclose cybervictimization to their peers and peers receive training to support those who make disclosures. Equipping adolescents with skills to support their peers who experience cybervictimization might help reduce the perception that peers are not effective support sources (Holfeld & Grabe, 2012). Therefore, interventions that focus on digital citizenship, empathy, and social skill development such as those described in Hutson et al.'s (2018) review may be particularly pertinent in supporting adolescents who experience cyberbullying.

GGM was also used to further explore the relationship between the various cybervictimization experiences and cyberbullying behaviours subscales and the variables of

interest in the current study. This supplementary analysis found associations between disclosure targets but not between cybervictimization and cyberbullying subscales and perceptions of helpfulness following a disclosure. Specifically, there was evidence of associations between the extrafamilial authority figures such that perceiving one extrafamilial target as helpful following disclosure then it was likely that other extra familiar targets would be perceived as helpful. Together this find may reflect how these authority figures are viewed, research suggests that while adolescents' attitudes towards their parents, teachers, and the police tend to be associated (Nihart et al., 2005) and generally positive although there is variation in how each authority figure is regarded (Murray & Thompson, 1985). Parents were regarded as having a moral responsibility for behaviour in the home and uniquely placed to offer punishment in the context of the broader social relationships within the home, teachers as having an instrumental impact on learning, and the police regarded as tough but compassionate. Perceiving parents and friends as helpful following a disclosure of cybervictimization was negatively associated, perhaps reflecting differences in what adolescents confide as well as who they will confide in. This finding may reflect the shift in attachment figures that occurs during adolescence from parents to peers (Nickerson & Nagle, 2005) and how adolescents' communication patterns with their parents change with age such that adolescents become more secretive (Lionetti et al., 2019).

Given the absence of links between the cybervictimization and cyberbullying behaviours subscales and perceptions of helpfulness following disclosure to the various targets the pattern points to potential mediating variables in the relationship such as trust. The role of trust in disclosure has been recently highlighted by Wójcik,and Rzeńca's (2021) qualitative study exploring young adults' retrospective accounts of bullying. The participants highlighted that they were more likely to disclose experiences of victimization to adults in the school environment if they trusted them, had confidence in their ability to manage the

disclosure appropriately, and believed they would take the disclosure seriously; however, the job role the adult fulfilled in the school environment was not important for disclosure. Therefore, exploring trust and characteristics of the target could be a fruitful avenue for future research. More fine-grained measures of disclosure would also support further confirmatory network analyses (e.g., see Williams & Mulder, 2020b).

There are three limitations of the current study. First, the cross-sectional survey design of the study meant that issues of causality could not be explored. Second, for some of the sample who had not experienced cybervictimization, their reports remained hypothetical. Third, the current study did not consider the relative success of previous disclosures in managing cybervictimization. Considering the relative success of previous disclosures is important because the support received from teachers following disclosure of bullying predicted future disclosure (Boulton et al., 2013). Future research exploring disclosure should consider the impact of previous disclosures of cybervictimization for future disclosures.

In summary, the findings highlight the complexity around 11- to 15-year-olds' propensity to disclose cybervictimization. There was variation in the factors that were associated with who the adolescents thought would be helpful following a disclosure of cybervictimization which potentially has implications for interventions designed to tackle cyberbullying.

Data availability statement

Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data is not available.

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Table 1

Logistic regression analyses describing disclosure of cybervictimization and perception of helpfulness following disclosure of cybervictimization

	B	SE	Wald	*p*	B	SE	Wald	*p*	B	SE	Wald	*p*
	General disclosure				Parents				Friends			
CVE[a]	-.03	.02	-2.12	.034	-.02	.02	1.09	.275	-.00	.01	-.18	.107
CB[b]	-.05	.03	-1.82	.069	-.03	.04	-.80	.423	-.04	.02	-1.62	.855
Age	-.16	.10	-1.53	.125	-.29	.12	-2.39	.017	.28	.07	3.86	.001
Gender[c]	.54	.25	2.14	.033	-.02	.26	-.09	.926	.45	.17	2.60	.009
Time	.00	.01	.02	.98	-.01	.01	-.66	.51	.00	.01	.60	.552
	Teachers				Head teachers				School nurse			
CVE[a]	.01	.02	.84	.399	.01	.02	.64	.521	-.02	.03	-.59	.556
CB[b]	-.02	.03	-.69	.493	-.05	.04	-1.21	.227	.02	.05	.51	.609
Age	-.14	.09	-1.61	.109	-.18	.12	-1.56	.119	-.10	.14	-.68	.495
Gender[c]	-.04	.20	-.20	.844	-.38	.27	-1.42	.155	.10	.33	.30	.765
Time	-.01	.01	-1.13	.258	-.01	.01	-.56	.577	-.02	.01	-1.24	.216
	Police											
CVE[a]	.02	.02	1.09	.275								
CB[b]	-.03	.04	-.80	.423								
Age	-.29	.12	-2.39	.017								
Gender[c]	-.02	.26	-.09	.926								
Time	-.01	.01	-.66	.510								

Note. [a]CVE = cyberbullying victimization experiences,

[b]CB = cyberbullying behaviors.

[c]Boys = 0, Girls = 1

Table 2

Partial correlations (posterior mean) and their 90% credible intervals from the Gaussian graphical model between cybervictimization experiences, cyberbullying behaviors, and perception of helpfulness following disclosure of cybervictimization

Relationship	Partial r	90% CrI
Girl–Age	-.140	[-.313, .016]
Girl–Friend	.167	[-.002, .385]
Age–Friend	.146	[-.021, .297]
Girl –Parent	.023	[-.152, .243]
Age–Parent	-.048	[-.210, .130]
Friend–Parent	-.332	[-.491, -.169]
Girl –Teacher	.264	[-.188, .518]
Age–Teacher	.097	[-.218, .436]
Friend–Teacher	-.036	[-.387, .361]
Parent–Teacher	-.058	[-.431, .276]
Girl –Police	.052	[-.300, .343]
Age–Police	-.203	[-.433, .129]
Friend–Police	-.186	[-.472, .156]
Parent–Police	-.115	[-.456, .143]
Teacher–Police	-.304	[-.630, .090]
Girl –Head Teacher	-.349	[-.601, .065]
Age–Head Teacher	-.111	[-.451, .195]
Friend–Head Teacher	.236	[-.168, .522]
Parent–Head Teacher	.220	[-.094, .563]
Teacher–Head Teacher	.810	[.652, .921]
Police–Head Teacher	.371	[.031, .683]
Girl–Nurse	.050	[-.260, .451]
Age–Nurse	.140	[-.200, .398]
Friend–Nurse	-.022	[-.370, .357]
Parent–Nurse	-.020	[-.339, .336]
Teacher–Nurse	.422	[.059, .739]
Police–Nurse	.677	[.441, .829]
Head Teacher–Nurse	-.098	[-.522, .288]
Girl –Technology use	-.077	[-.233, .07]
Age–Technology use	-.058	[-.150, .108]
Friend–Technology use	-.053	[-.185, .115]
Parent–Technology use	-.149	[-.286, .008]
Teacher–Technology use	-.107	[-.401, .134]
Police–Technology use	-.187	[-.396, .086]
Head Teacher–Technology use	.092	[-.156, .379]
Nurse–Technology use	.176	[-.104, .419]
Girl –CB image	.072	[-.116, .238]
Age–CB image	.248	[.129, .401]
Friend–CB image	-.019	[-.194, .172]
Parent–CB image	-.012	[-.200, .152]
Teacher–CB image	-.114	[-.461, .195]

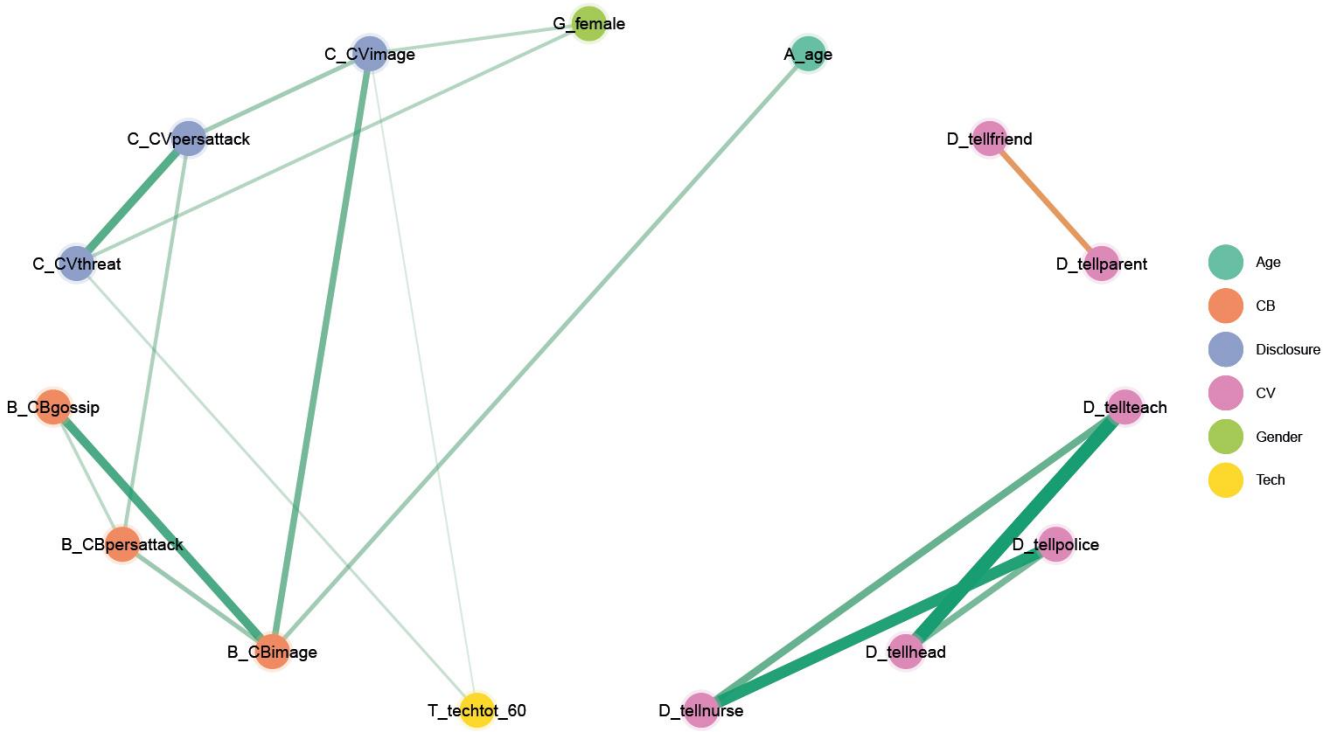
Police–CB image	-.002	[-.295, .283]
Head Teacher–CB image	.044	[-.253, .418]
Nurse–CB image	.052	[-.255, .354]
Technology use–CB image	.001	[-.188, .081]
Girl –CB personal attack	-.122	[-.298, .054]
Age–CB personal attack	.071	[-.089, .205]
Friend–CB personal attack	.075	[-.078, .265]
Parent–CB personal attack	.066	[-.096, .246]
Teacher–CB personal attack	-.116	[-.447, .201]
Police–CB personal attack	-.089	[-.353, .204]
Head Teacher–CB personal attack	-.009	[-.312, .349]
Nurse–CB personal attack	.214	[-.090, .467]
Technology use–CB personal attack	.142	[-.010, .267]
CB image–CB personal attack	.263	[.122, .413]
Girl –CB gossip	-.162	[-.332, .018]
Age–CB gossip	-.075	[-.232, .057]
Friend–CB gossip	-.061	[-.253, .097]
Parent–CB gossip	-.139	[-.299, .049]
Teacher–CB gossip	.122	[-.198, .460]
Police–CB gossip	-.090	[-.386, .190]
Head Teacher–CB gossip	-.002	[-.390, .281]
Nurse–CB gossip	-.030	[-.301, .326]
Technology use–CB gossip	-.028	[-.133, .136]
CB image–CB gossip	.504	[.412, .618]
CB personal attack–CB gossip	.176	[.002, .300]
Girl –CVE Threat	.197	[.036, .358]
Age–CVE Threat	.103	[-.030, .249]
Friend–CVE Threat	-.139	[-.299, .038]
Parent–CVE Threat	-.062	[-.245, .096]
Teacher–CVE Threat	-.093	[-.341, .279]
Police–CVE Threat	.004	[-.215, .341]
Head Teacher–CVE Threat	.158	[-.191, .408]
Nurse–CVE Threat	-.060	[-.427, .156]
Technology use–CVE Threat	.145	[.045, .300]
CB image–CVE Threat	-.053	[-.177, .122]
CB personal attack–CVE Threat	.086	[-.026, .262]
CB gossip–CVE Threat	.130	[-.052, .240]
Girl –CVE Personal attack	-.065	[-.210, .110]
Age–CVE Personal attack	-.072	[-.206, .058]
Friend–CVE Personal attack	-.015	[-.194, .114]
Parent–CVE Personal attack	.008	[-.156, .159]
Teacher–CVE Personal attack	.075	[-.284, .333]
Police–CVE Personal attack	.113	[-.199, .322]
Head Teacher–CV Personal attack	-.048	[-.322, .286]
Nurse–CVE Personal attack	-.159	[-.358, .215]
Technology use–CVE Personal attack	-.069	[-.211, .024]
CB image–CVE Personal attack	.046	[-.104, .164]
CB personal attack–CVE Personal attack	.212	[.077, .335]
CB gossip–CVE Personal attack	-.023	[-.146, .119]
CVE Threat–CVE Personal attack	.474	[.348, .563]

Girl –CVE Image	.190	[.025, .367]
Age–CVE Image	-.058	[-.217, .077]
Friend–CVE Image	.119	[-.066, .281]
Parent–CVE Image	.054	[-.129, .226]
Teacher–CVE Image	.186	[-.140, .492]
Police–CVE Image	.132	[-.173, .388]
Head Teacher–CVE Image	-.128	[-.454, .199]
Nurse–CVE Image	-.154	[-.428, .159]
Technology use–CVE Image	.103	[.001, .265]
CB image–CVE Image	.377	[.257, .510]
CB personal attack–CVE Image	-.019	[-.155, .153]
CB gossip–CVE Image	.009	[-.168, .135]
CVE Threat–CVE Image	.124	[-.043, .252]
CVE Personal attack–CVE Image	.249	[-.313, .016]

Note. CVE = cyberbullying victimization experiences, CB = cyberbullying behaviors.

Figure 1

Graphical summary of the partial correlation network between predictor and disclosure variables (paths where the 90% credible includes zero are not depicted). Positive associations are in green and negative associations in orange, with thicker lines indicating stronger partial correlations.



Note. The nodes (circles) represent variables and are letter and color coded by type to aid interpretation. A (Age): chronological age in years; B (Cyberbullying behaviors): mean rating on the image, threat, personal attack subscales; C (Cybervictimization experiences): mean rating on the image, personal attack and gossip subscales; D (disclosure targets): coded 1 if disclosure of cyberbullying was reported as helpful and 0 if not for friend, parent, teacher, head teacher, nurse or police; G (gender): coded as 1 for female and 0 for male; T (technology use): total hours per week across all devices. The lines represent positive (green) or negative (orange) partial correlations.