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## Systematic Review of Cyberbullying Interventions for Youth and Parents With Implications for Evidence-Based Practice

**Elizabeth Hutson, RN, MS, PMHNP-BC [Doctoral Student],**

The Ohio State University, College of Nursing, Columbus, OH, USA

**Stephanie Kelly, RN, PhD, FNP [Research Assistant Professor],**

The Ohio State University, College of Nursing, Columbus, OH, USA

**Lisa K. Militello, RN, PhD, MPH, CPNP [Assistant Professor]**

The Ohio State University, College of Nursing, Columbus, OH, USA

### Abstract

**Background:** Cyberbullying is a new risk factor for the well-being of pediatric populations. Consequences of cyberbullying include both physical and mental health concerns such as depression, anxiety, and somatic concerns. Adolescents who have been victims of cyberbullying and developed secondary symptoms are often recommended to visit a healthcare provider to obtain effective, evidence-based treatment. To date, no interventions exist in the healthcare setting for adolescents who are victims of cyberbullying.

**Aims:** The purpose of this project is to review interventional studies on cyberbullying that have components for adolescents who have been involved with cyberbullying and their parents and to provide recommendations on effective intervention components with the goal of guiding clinical practice.

**Methods:** A systematic review was conducted using the Institute of Medicine guidelines. A comprehensive electronic literature search was completed targeting interventions of cyberbullying in any setting. No date limits were used. Literature was searched in MEDLINE, Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed, Communication and Mass Media Complete, Education Information Resource Center (ERIC), and PsycINFO databases. The following search terms were applied “cyberbullying” + “intervention” or “treatment” or “therapy” or “program.” Only articles with a pediatric population were selected for review.

**Results:** Seventeen cyberbullying intervention programs in 23 articles were found to meet the search criteria. The most frequently used intervention components included education on cyberbullying for the adolescent, coping skills, empathy training, communication and social skills, and digital citizenship. Parent education on cyberbullying was also found to be important and was included in programs with significant outcomes.

**Linking Evidence to Action:** As youth present to healthcare providers with symptoms related to cyberbullying, effective interventions are needed to guide evidence-based practice. This review

supports educating the individual youth and parent on cyberbullying and teaching the youth skills in communication and social, empathy, coping with cyberbullying, and digital citizenship.

### Keywords

cyberbullying; systematic review; intervention; youth; pediatrics; bullying; parents; evidence-based practice

## BACKGROUND

Bullying is a phenomenon that factors into youth depression and anxiety (Arseneault, 2017; Wang, Nansel, & Iannotti, 2011). Past reviews have found that the immediate consequences of bullying in childhood include symptoms of depression, anxiety, low self-esteem, and a nearly threefold increase in suicidal behavior (Gini & Pozzoli, 2013; Holt et al., 2015; Moore et al., 2017; Tsaousis, 2016). Cyberbullying, a new form of bullying has been defined as “willful and repeated harm inflicted through aggressive actions through the use of computers, cell phones, and other electronic devices” (Hutson, 2016, p. 13). Cyberbullying may have worse outcomes for youths than traditional bullying as cyberbullying can reach a wider audience, be done anonymously, and occur at any time of the day or night. In addition, research has found that cybervictimization predicted worse outcomes than traditional victimization for symptoms of depression, anxiety, self-esteem issues, absenteeism, and physical health (Giumetti & Kowalski, 2016) and has a stronger relationship with suicidal ideation (van Geel, Vedder, & Taniil, 2014).

These adverse consequences do not fade away, but can lead to long-term concerns including academic problems (Busch et al., 2014), lower standardized achievement test scores (Lacey, Cornell, & Konold, 2017), psychiatric medication use, costly psychiatric hospitalization (Sourander, Ronning, & Brunstein-Klomek, 2009), and future workplace bullying (Matthiesen & Einarsen, 2007). Thus, cyberbullying is not just a short-term problem for adolescents, but can cause long-term adverse physical and emotional health outcomes (National Academies of Sciences, Engineering, and Medicine, 2016). A strategy to reduce the immediate and long-term consequences of cyberbullying may be to implement cyberbullying interventions that include evidence-based intervention components.

Most cyberbullying intervention programs have taken place in K-12 schools. These intervention programs have included both primary and secondary prevention, with the goal being to prevent cyberbullying before it has occurred or reduce the impact after it has occurred. Cantone et al. (2015) completed a systematic review that assessed the effectiveness of school interventions on bullying and cyberbullying. They found that whole school interventions were more effective than individual student interventions but in general the studies did not show positive long-term results. Of note, the two programs that focused on the individual student, rather than the whole school, were published in 2004 and focused exclusively on bullying, not cyberbullying (Cantone et al., 2015).

Della Cioppa, O’Neil, and Craig (2015) also completed a systematic review on cyberbullying interventions in schools assessing the scientific merit and ease of implementation. They found that most lacked scientific merit, in that they did not use

random assignment. They also found that many of the programs were difficult to implement as they did not include a program manual, did not have ongoing maintenance and support for the program implementers, and did not include estimates of the cost (Della Cioppa et al., 2015).

These reviews were helpful in determining the problematic areas in the research. However, as they have exclusively been done in schools, they have only focused on primary and secondary prevention. None were found that targeted tertiary prevention or chronic conditions, namely youths who have been involved in one of the three main roles of cyberbullying (bully, victim, or bully & victim) and present with mental health concerns to a healthcare provider. Recommendations currently state that youths who have been involved with cyberbullying with subsequent development of mental health problems should visit a healthcare provider to obtain effective treatment (stopbullying.gov, 2017). To our knowledge, no cyberbullying interventions have been developed for use in the healthcare setting for youths who have been involved with cyberbullying and present with mental health symptoms. The purpose of this article was to review evidence-based cyberbullying interventions to identify effective intervention components that could be extrapolated for use in the healthcare setting.

## AIMS

The purpose of this systematic review was to: (a) identify and examine interventional studies for youths (under age 18) who have been involved with cyberbullying (bully, victim, or bully & victim), (b) examine the impact of including parents in the intervention, and (c) to provide recommendations on effective intervention components to formulate clinical practice guidelines.

## METHODS

### Review Method

As recommended for evidence-based practice, the PICO (Problem/Patient/Population, Intervention/Indicator, Comparison, Outcome) format was used to develop the search strategy for this systematic review. The PICO question for this review was: In youths who have been involved in cyberbullying (patient population), what individual components from cyberbullying intervention programs exist (intervention of interest) versus other types of interventions (comparison or control intervention) to decrease the frequency of cyberbullying (outcome; Melnyk & Fineout-Overholt, 2011). This review was conducted using the Standards for Systematic Reviews set forth by the Institute of Medicine (2011).

### Inclusion and Exclusion Criteria

Inclusion criteria for the study were: (a) intervention study addressing cyberbullying in any setting, (b) participant age  $\geq$  18 years, (c) study outcome of frequency of cyberbullying or intent to cyberbully, (d) included components to help individuals or parents or caregiverscope with cyberbullying, and (e) published in a peer-reviewed journal. Studies were excluded from this review if they were published in a language other than English or only discussed traditional bullying.

## Search Methods

A comprehensive electronic literature search was conducted targeting interventions of cyberbullying in any setting through October 2016. Literature was searched in MEDLINE, Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed, Communication and Mass Media Complete, Education Information Resource Center (ERIC), and PsycINFO databases. The following search terms were applied “cyberbullying” + “intervention” or “treatment” or “therapy” or “program.” Citation titles were first assessed and if determined to meet criteria, the abstract was assessed for inclusion and exclusion criteria. Full-text articles were retrieved for all abstracts that appeared to meet the criteria and were evaluated. References in articles were reviewed for manuscripts meeting review criteria (i.e., backward searching). Handsearching through the *Journal of Aggressive Behavior* was also conducted from 2010 onwards because this journal had published many interventional studies related to cyberbullying.

## Data Collection and Analysis

Data for each study were extracted and any discrepancies were discussed and resolved (see Table S1, Figure S1). Data regarding study quality were also extracted. The Cochrane Collaborations Tool for assessing the risk of bias in randomized trials was used to formally assess the risk of selection, performance, detection, reporting, and attrition bias (Higgins et al., 2011). The Rapid Critical Appraisal Checklist for a Randomized Clinical Trial tool by Melnyk and Fineout-Overholt (2005) was also used.

## RESULTS

Twenty-three manuscripts, with 17 unique programs, were identified that met the inclusion criteria. The articles were published between 2011 and 2016. The sample ranged from 10 to 20 years of age and the number of participants ranged from 16 to 18,412. Studies were conducted in Finland, Germany, Austria, Italy, Spain, Turkey, Greece, Singapore, Taiwan, Australia, and the United States. All programs were conducted in the school setting. Study design included randomized controlled trials, quasi-experimental, and one posttest only design. It is important to note that the NoTrap! Program had four trials, with slight alterations to subsequent trials, whereas the KiVa program had two trials that may have been similar. We chose not to exclude these programs; therefore, the intervention components may be weighted due to these trials.

## Interventions

There was a range of intervention formats used in the studies including lectures, discussion groups, role playing, and group projects. Program length varied from 1 day to an entire school year. Information about the number of sessions was not given for each program; however, many studies reported weekly 60- to 90-minute sessions. One program included complete integration with the school culture, even having the teachers wear highly visible vests reminding the students of the program (Salmivalli, Karna, & Poskiparta, 2011).

## Intervention Components

The interventions were assessed for overarching components that guided the program or were taught to the individual youths and the definitions of these components can be found in Table 1. Certain intervention components were highly used but focused more on changing the school climate, therefore for the purpose of this review only individual components will be discussed. The most commonly included individual intervention components were digital citizenship, coping skills, education on cyberbullying, communication and social skills, and empathy training. Please see Tables S2 and S3 for individual program components.

Digital citizenship, which we defined as using technology in a responsible way or being a good citizen online (Ribble, 2017), was found in 13 of the 17 programs. For example, the CONRED program provided information for the youths on how to appropriately use the Internet and also warned about the dangers of its misuse (Del Rey, Casas, & Ortega, 2012, 2016; Ortega-Ruiz, Del Rey, & Casas, 2012). The Cyber Friendly Schools Program discussed netiquette that is a concept similar to digital citizenship (Cross et al., 2016).

Coping skills were defined as ways for the youths to respond to cyberbullying, and were taught in 10 of the 17 programs. The KiVa program taught the youths coping skills that they then practiced online (Williford et al., 2013). Cyberprogram 2.0 included a module on coping by helping the youths think of the bullying situation from different roles (Garaigordobil & Martínez-Valderrey, 2016).

Education on cyberbullying was included in 10 of the 17 programs. Education included topics such as teaching what cyberbullying is or focusing on teaching the youths about the negative consequences of cyberbullying. Another component taught to the individuals in over half of the programs ( $n = 9$ ) was communication and social skills. In the Viennese Social Competence Program (ViSC), the youths worked together on a group project, thus practicing their social skills (Gradinger, Yanagida, Strohmeier, & Spiel, 2015, 2016). Empathy training was present in over half of the programs ( $n = 9$ ) and included teaching the youth to look at the cyberbullying situation from the perspective of the victim or bystander. For example, the Media Heroes program included a module on feelings and perspectives in cyberbullying (Wölfer et al., 2014).

## Parent Components

Less than half of the programs ( $n = 7$ ) included educational content for the parents of the children who participated. Most of the educational content for parents was done in parent meetings or training sessions. The Cyber Friendly Schools Program included online resources for parents (Cross et al., 2016), whereas the KiVa program distributed written information to the parents (Salmivalli et al., 2011; Williford et al., 2013). The Media Heroes program hosted a parent evening where the youths presented the information to their parents (Schultze-Krumbholz, Schultze, Zagorscak, Wölfer, & Scheithauer, 2016; Wölfer et al., 2014).

## Outcomes

For the purpose of this review, frequency of participation in cyberbullying or intent to participate, either as a perpetrator of cyberbullying or cybervictim, will be discussed and are individually mentioned in Table S2. Nine programs found a significant decrease in cyberbullying. Ten programs found significant decreases in frequency of cybervictimization. Other programs did not find significant decreases in either cyberbullying, cybervictimization, or intent to cyberbully.

Only three studies included follow-up varying in length from 6 to 12 months (Cross et al., 2016; Gradinger et al., 2015, 2016; Palladino, Nocentini, & Menesini, 2016). Seven of the interventions included parent education and it is important to note that these programs were also among the successful programs in reducing cyberbullying and cybervictimization (Cross et al., 2016; Del Rey et al., 2012, 2016; Garaigordobil & Martínez-Valderrey, 2014, 2015a, 2015b, 2016; Gradinger et al., 2015, 2016; Ortega-Ruiz et al., 2012; Salmivalli et al., 2011; Schultze-Krumbholz et al., 2016; Williford et al., 2013; Wölfer et al., 2014).

## Quality Assessment

Only 10 of the 17 studies were randomized, thus four of the criteria from the Cochrane tool were not applicable to the nonrandomized studies (see Table S3). Many items on the tools (e.g., randomization process, concealed treatment allocation, blinding of research personnel & participants) were either not reported or unclearly reported by authors. All of the studies were determined low risk of bias for reporting on specified outcome data.

## Strengths and Limitations

There were many strengths to the intervention programs. One major strength is that all of the programs except two included a large sample size above 176 participants. Most programs included online components that could be important for youth participation, ease of implementation, and translation for future programs. In addition, more than half of the programs were theoretically driven.

Limitations of the programs included the use of self-report measures in all of the programs with no concurrent teacher or parent measures. Most of the articles did not include a definition of cyberbullying, so it is difficult to discern if all of the studies were measuring the same phenomenon; however, as we wanted to capture as many articles as possible, we did not exclude these articles from our review. Consistent with previous reviews, many of the interventions were conducted outside of the United States, thus cultural differences may have played into the interventions and outcomes (Evans, Fraser, & Cotter, 2014). In addition, the articles varied in descriptions of their program components, which is challenging for future replications.

## DISCUSSION

The findings from this systematic review identified individual intervention components that could be integrated into clinical practice guidelines and for future cyberbullying interventions. Programs with significant reductions in both cyberbullying and

cybervictimization included the individual components of communication and social skills, empathy training, coping skills, and digital citizenship. This review also highlighted the importance of including parents in the education on cyberbullying in future interventions that has been supported by the National Academies of Sciences, Engineering, and Medicine (2016).

It is unclear if other intervention components were effective in reducing cyberbullying. For example, changing attitudes regarding cyberbullying was included in seven of the intervention programs, with less than half ( $n = 3$ ) having success in either reducing cyberbullying or cybervictimization (Cross et al., 2016; Schultze-Krumbholz et al., 2016; Williford et al., 2013; Wölfer et al., 2014). In four studies, self-efficacy regarding ability to not participate in cyberbullying was addressed. However, only two of the programs that included self-efficacy were successful in reducing cyberbullying or cybervictimization (Cross et al., 2016; Williford et al., 2013).

There were limitations to this systematic review that must be mentioned. First, only articles written in English were evaluated. Second, the specific search terms used may not have captured all articles on this phenomenon. Most studies use the term cyberbullying, but when adolescents were queried about cyberbullying-type behaviors online, a multitude of terms were identified such as cybermobbing, hacking, or abuse (Nocentini et al., 2010). Finally, a systematic review was completed rather than a meta-analysis because of the differences in the measurement of cyberbullying.

## IMPLICATIONS FOR CLINICAL PRACTICE

As the interventions found were completed in schools with the whole-school population, none could be implemented in full by healthcare providers (HCP), including school nurses or primary care providers; however, there are important implications for clinical practice. HCP may use the synthesized evidence in conjunction with American Academy of Pediatrics recommendations to address bullying and cyberbullying (American Academy of Pediatrics, 2017). HCP at all levels can provide education on cyberbullying and digital citizenship and teach skills in communication, empathy, and coping to children who they suspect are involved in cyberbullying. These are also skills that can be addressed through counseling, therefore we recommend that children who screen positive for cyberbullying and have negative consequences such as depression and anxiety participate in counseling. We also recommend that all agencies that work with youth who have experienced or are suspected of having experienced cyberbullying to coordinate interventions directly or through a referral process (National Academies of Sciences, Engineering, and Medicine, 2016).

We also found strong evidence for parental education on cyberbullying as evidence by the inclusion of this component in the successful interventions. The importance of parent education and training has also been discussed in the traditional bullying intervention literature (Tofi & Farrington, 2011). From this we conclude that healthcare providers should not only provide education on cyberbullying to the patient, but to the parent as well. In addition, a qualitative study by Fenaughty and Harré (2013) found that youths were hesitant



to approach their parents when they were being electronically harassed as they were fearful of overreaction, having their phones taken away, or being blamed. Providing parents with education on cyberbullying and communication techniques may lead the child to be more secure in approaching their parent when they are involved with cyberbullying.

## IMPLICATIONS FOR FUTURE RESEARCH

One of the major limitations in the studies reviewed was that they all took place in schools. Schools can be problematic for research in that they do not allow for true randomization. Also, school-based studies are typically primary or secondary prevention and do not target the tertiary care issues youths experience as a result of cyberbullying, namely depression and anxiety. Many youths also present to the healthcare provider or the emergency department with complaints of bullying. Research done in the healthcare setting can more effectively target tertiary care (Ranney et al., 2016). Future cyberbullying intervention studies need to be conducted by healthcare providers in a variety of settings and in cooperation with other agencies such as schools and community programs (National Academies of Sciences, Engineering, and Medicine, 2016). Another benefit to studies in the healthcare setting is the ability to conduct individual interventions, which may be more beneficial for youth who suffer from consequences of cyberbullying such as depression or anxiety.

## CONCLUSIONS

Cyberbullying is a new phenomenon that has a plethora of research into its existence but a paucity regarding ways to prevent or reduce its short and long-term consequences. We identified issues in interventional study quality related to scientific rigor, with lack of randomization a major limitation. Thematic components were identified in the 23 cyberbullying programs reviewed that could be included in future cyberbullying interventions in the healthcare setting, such as education, coping skills, empathy training, communication and social skills, and digital citizenship. The importance of education on cyberbullying for parents or caregivers of these children was highlighted as this component was included in effective programs. Ultimately, more high-quality research needs to be conducted to determine the best cyberbullying interventions for individual youth and their parents in the context of the school and healthcare system.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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### LINKING EVIDENCE TO ACTION

- No published interventions exist in the healthcare setting for youth who have been involved with cyberbullying.
- The most effective individual components from cyberbullying intervention programs that could be adapted in the healthcare setting were teaching communication/social skills, empathy training, coping skills, and education on digital citizenship.
- Healthcare providers should either address these skills or provide a referral to a mental health specialist for youth who have been involved with cyberbullying.
- Education for parents on cyberbullying should also be provided by the healthcare provider when they suspect youth are involved with cyberbullying.

**Table 1.**

Intervention Components

Component	Definition	Times used
Digital citizenship	Using technology in a responsible way or being a good citizen online	13 <sup>b,c,d,e,f,j,k,l,m,n,o,p,q</sup>
Collaborative	Getting the youth to work together during the intervention	13 <sup>a,b,c,d,e,f,g,h,i,j,k,o,p</sup>
Awareness raising	Increasing the knowledge and awareness of cyberbullying	12 <sup>a,b,c,d,e,f,i,j,k,m,n,p</sup>
Coping skills	Ways for the youth to respond to cyberbullying	10 <sup>a,b,c,d,g,i,j,m,n,p</sup>
Education on cyberbullying	Teaching the youth what cyberbullying is and other information related to cyberbullying awareness	10 <sup>e,f,g,i,j,k,n,o,p,q</sup>
Communication/social skills	Teaching the youth effective and appropriate skills to communicate in the social setting, either online or in person	9 <sup>a,b,c,d,f,g,h,m,n</sup>
Empathy training	Teaching the youth to look at the cyberbullying situation from the perspective of the person involved	9 <sup>b,c,d,g,i,j,m,n,p</sup>
Peer mentors	Youth who took a more active role mentoring other youth in the study	7 <sup>a,b,c,d,l,l,n</sup>
Parent education	Educating the parents on important cyberbullying topics	7 <sup>f,g,h,i,j,m,n</sup>
Changing attitudes	Beliefs regarding cyberbullying	7 <sup>f,j,l,n,o,p,q</sup>
Legal consequences	Teaching the youth the legal consequences of cyberbullying	6 <sup>e,f,m,n,o,q</sup>
Teacher involvement in bullying situation	Having the teachers moderate the cyberbullying situation	5 <sup>f,h,i,j,p</sup>
Self-efficacy	Improving the youths belief that they can effectively intervene in cyberbullying	4 <sup>f,j,p,q</sup>
Norms	Perceived prevalence of cyberbullying	3 <sup>f,n,p</sup>
Talking to an adult	Teaching the youth to talk to an adult when they are involved with cyberbullying	3 <sup>f,p,q</sup>
Moral disengagement	Disengaging from the immoral aspects of the cyberbullying act by changing their beliefs	2 <sup>f,p</sup>
Sensibility	Defense system to a perceived threat	1 <sup>k</sup>

<sup>a</sup> Noz. Menesini, Nocentini, and Palladino (2012)

<sup>b</sup> Menesini et al. (2012), Palladino, Nocentini, and Menesini (2012)

<sup>c</sup> Palladino et al. (2016)

<sup>d</sup> Palladino et al. (2016)

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<sup>c</sup> Athanasiades, Kamariotis, Psalti, Baldry, and Sorrentino (2015)

<sup>f</sup> Cross et al. (2016)

<sup>g</sup> Garaigordobil and Martfnez-Valderrey (2014, 2015a, 2015b, 2016)

<sup>h</sup> Gradinger et al. (2015, 2016)

<sup>i</sup> Salmivalli et al. (2011)

<sup>j</sup> Williford et al. (2013)

<sup>k</sup> Tannikulu, Kimay, and Arcak (2015)

<sup>l</sup> Liau et al. (2015)

<sup>m</sup> Del Rey et al. (2012), Ortega-Ruiz et al. (2012), Del Rey et al. (2016)

<sup>n</sup> Wölfer et al. (2014), Schultze-Krumholz et al. (2016)

<sup>o</sup> Lee, Zi-Pei, Scanstro, and Dalal (2013)

<sup>p</sup> Barkoukis, Lazuras, Ourda, and Tsorbatzoudis (2016)

<sup>q</sup> Roberto, Eden, Savage, Ramos-Salazar, and Deiss (2014).