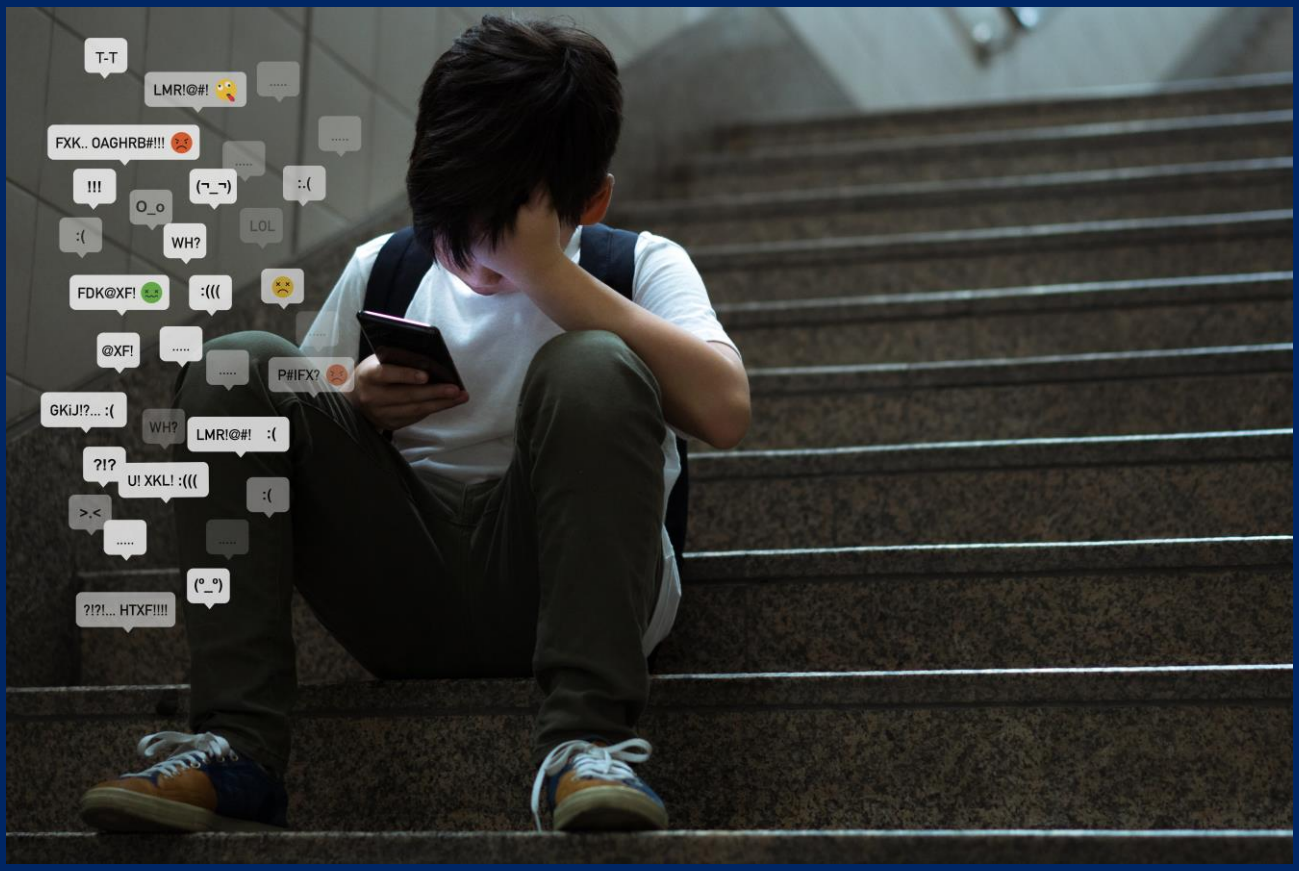
Protecting children and adolescents from cyberbullying: An evidence review of risk and protective factors and effective interventions

NSW GOVERNMENT

August 2024



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Acknowledgment of Country

We acknowledge and pay respects to the past, present and future Traditional Custodians and Elders of NSW and the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander Peoples.

Helping students to engage more safely in online activities, especially when using social media, is a priority across NSW schools. This evidence review provides the latest scientific insights about cyberbullying to support decision makers in NSW education to strengthen online safety policy and practice.

This report uses a combination of language used by the authors of the reviewed studies and (where possible) plain language to minimise the use of technical language. Terms used to describe characteristics of individuals and groups may not reflect the preferred language of individual children and adolescents. We echo sentiments to ask individual children and adolescents how they would like to refer to themselves and use their preferred language.

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Terms used in this report

The table below provides a list of terms used in this report and their definitions.

This report uses a combination of language used by the authors of the reviewed studies and (where possible) plain language to minimise the use of technical language.

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Term	Definition
Online behaviours and environment	
being cyberbullied	Being the target of cyberbullying behaviours.
cyberbullying others	Engaging in the cyberbullying of others.
negative bystander behaviours	Actions taken by witnesses of cyberbullying that either don't help or harm someone who is being cyberbullied.
positive bystander behaviours	Constructive actions taken by witnesses of cyberbullying including seeking to improve the situation for the person being cyberbullied.
digital technology	Umbrella term to describe all the information and communication technology used by children and adolescents, particularly mobile phones and computers, and social media and other apps.
ICT	Information and communication technology.
Groups of people	
adolescents	Young people aged 11-18 years (approx.).
children	Young people aged approximately 5-10 years. Children aged younger than 5 years are not the focus of this report.
primary students	Students aged 5-10 years (approx.).
secondary students	Students aged 11-18 years (approx.).
young people	Collective term referring to people aged 5-25 years (approx.).
Risk and protective factors	
antisocial personality traits	Traits associated with antisocial personality disorders, such as hostility and impulsivity.
authoritarian parenting style	A low warmth, high control parenting style characterised by a lack of empathy, caring and respect for a child combined with control and punishment. Controlling and punishing parental behaviour can be active (e.g., using physical force, yelling, invading privacy, intimidation, or threats) or passive (e.g., using manipulation, guilt-tripping or shaming).
collaborative strategies for internet use	Strategies whereby parents involve their children in decision making about children's online behaviours such as rules about internet use.
emotional management	Skills that help to react constructively to situations by recognising and managing emotional responses like stress, anger and sadness.
active mediation of children's activities online	Positive actions taken by parents to reduce their children's risk of experiencing harms online. Examples include having open discussions about the internet with their children and jointly creating rules for internet use.
externalising problems	Externally directed challenges such as engaging in delinquent, defiant and rule-breaking acts.

Term	Definition
internalising problems	Internally directed challenges such as depression, anxiety, stress and loneliness.
moral disengagement	Cognitive processes that enable people to behave unethically without feeling distressed.
neurodivergent individual	A person who is diagnosed with a neurodevelopmental condition, such as autism or attention-deficit hyperactivity disorder (ADHD).
parental engagement with guilt and shame strategies	Parenting that uses guilt or shame to pressure a child to behave in particular ways.
parental warmth	Parenting characterised by being kind, loving, caring, showing respect for one's child and being responsive to their needs.
peer attachment	The degree to which a child or adolescent has a close bond with one or more peers who satisfies their needs for emotional support.
positive peer influence	Child/adolescent behaviours that lead to positive outcomes for themselves or people around them.
positive school climate	The impact of all the actions taken by the school community to maintain the safety, sense of belonging and support of students. It includes what the school leadership and staff say and do to promote the safety and wellbeing of the school community.
prosocial peer influence	Child/adolescent behaviours that lead to positive outcomes for the people around them.
school connectedness	The extent to which students feel that adults and their peers in the school support, value and care about their wellbeing and academic progress.
social norms	Informal rules that define acceptable and appropriate behaviour by most others within a group or community.
Interventions	
Tier 1 (universal intervention)	Intervention strategies applied universally across all students.
Tier 2 (selective intervention)	Interventions applied for higher risk students in a targeted manner (e.g., students identified as likely to be cyberbullied).
Tier 3 (indicated intervention)	Interventions applied in response to an identified or persistent issue experienced by a student (e.g., student who is involved in a cyberbullying incident).
Research concepts Taken or adapted from the Australian Education Research Organisation (AERO)'s website (https://www.edresearch.edu.au/summaries-explainers/explainers/key-concepts-research)	
confidence level	Provided by the Australian Education Research Organisation (AERO), confidence levels are used to convey the degree to which the evidence for a particular education program, practice or policy is rigorous and relevant. Confidence levels range from Level 1 (low) to Level 4 (very high). In this report, estimated confidence levels are provided for specific findings.
effect size	An estimate of the strength of a particular effect. For example, the degree to which a cyberbullying intervention reduces the prevalence of cyberbullying.
evaluation	The systematic and objective assessment of an approach. Evaluation provides evidence of what has been done well, what could be done better, the extent to which objectives have been achieved and/or the impact of the approach. This evidence can then be used to inform ongoing decision-making regarding the approach.
meta-analysis	Research that uses statistical methods to combine data from multiple studies about the same research question to produce a more reliable estimate of the size of the effect of an intervention.

Term	Definition
primary study	An individual study which reports on data collected and analysed by the researchers themselves. Primary studies are designed according to the type of research question being answered - for example, they may use qualitative methods, quantitative methods, or be mixed-methods research. The findings from numerous primary studies may be synthesised in meta-analyses, systematic reviews, rapid reviews or literature reviews.
qualitative methods	Methods that involve collecting and analysing non-numerical data, and may include observations, interviews, questionnaires, focus groups, and documents and artifact analysis. Qualitative methods can be used to understand concepts, opinions or experiences as well as to gather in-depth insights into a problem or generate new ideas.
quantitative methods	Methods that involve collecting and analysing numerical data. Quantitative methods are generally used to find patterns and averages, make predictions, test causal relationships and generalise results to wider populations.
quasi experiment	A research methodology that aims to establish a 'cause and effect' relationship (that is, to determine the specific factors that influence an outcome), but it cannot eliminate all factors that could influence an outcome (that is, there may still be an element of subjectiveness in the findings).
randomised controlled trial	A trial of a particular approach that is set up to allow researchers to test its effects. In a randomised controlled trial, participants are randomly assigned to one of two groups: one receiving the approach that is being tested (the experimental group), and the other receiving an alternative approach or no approach (the comparison group or control). After the trial period, differences between the groups can typically be attributed to the approach being tested. Researchers and teachers who use randomisation must consider ethical concerns, such as whether it is ethical to withhold treatment from subjects in the comparison group.
systematic review	A type of literature review that provides a robust answer to a particular research question by identifying and synthesising all the relevant academic research. This review uses rigorous and transparent methods to search for and summarise studies. These methods aim to reduce bias and are reported in such a way that another researcher should be able to reproduce the results following the same method. Systematic reviews will also identify when different studies about the same issue have found different results.

1

Executive Summary

Executive Summary

Helping students to engage more safely in online activities, especially when using social media, is a priority across NSW schools. Online environments and the ways people behave online are complex and evolving rapidly. This evidence review provides the latest scientific insights about cyberbullying to support decision makers in NSW education to enhance online safety policy and practice.

In a recent survey, 44% of Australian young people reported they had a negative online experience in the last 6 months, including 15% who received threats or abuse online (eSafety Commissioner, 2021). Although cyberbullying is common, more needs to be done to fully understand this public health concern and how to best address it.

This evidence review aims to understand risk and protective factors for cyberbullying, impacts of cyberbullying on children and adolescents, and the effectiveness of cyberbullying interventions. It integrates findings from 105 papers, including meta-analyses and systematic reviews, published in the academic literature between 2019 and 2024. These papers drew evidence from a combined total of approximately 2300 studies.

Insights from this evidence review are used to provide cross-sector education considerations for online safety policy and practice for students, school staff and parents/carers. Key findings and considerations from the evidence review are provided below.

Key findings

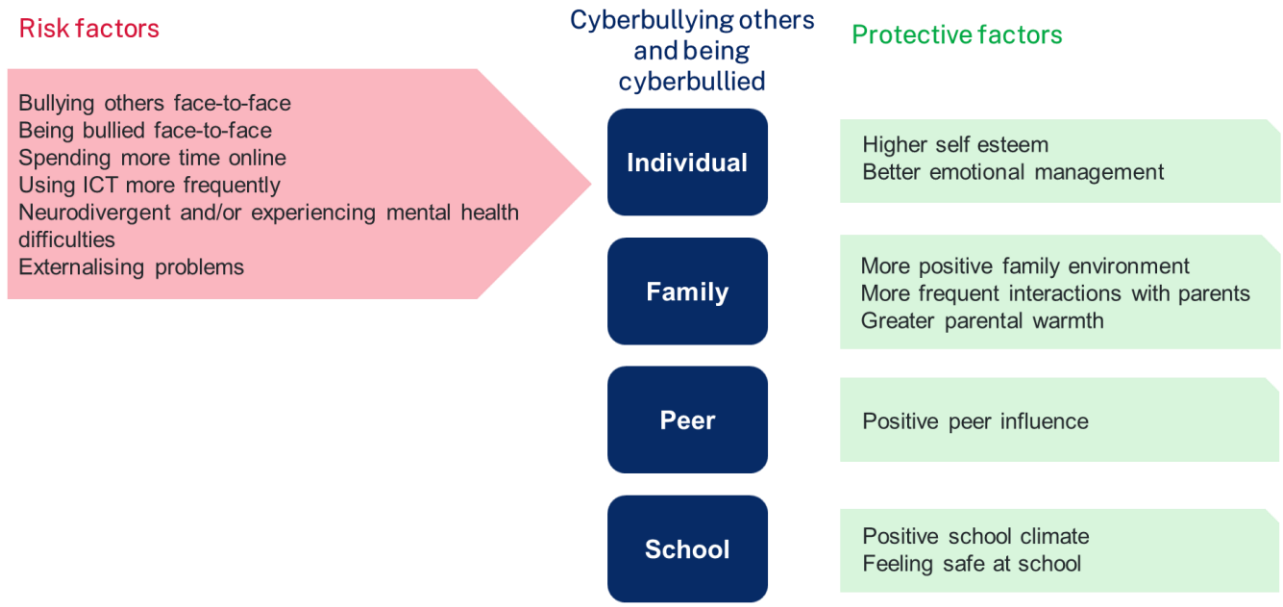
Finding 1: Cyberbullying spans interrelated developmental systems: individual, family, peer, school and community.

Finding 1a. Individual, family, peer and school factors all contribute to cyberbullying.

Different cyberbullying roles (cyberbullying others and being cyberbullied) are associated with shared and distinct factors at the individual, family, peer and school levels (e.g., Farrington et al., 2023). Shared risk and protective factors for cyberbullying others and being cyberbullied are shown in Figure 1.

Given most cyberbullying and unsafe behaviours happen outside of school hours, it is critical to understand the role of parents and carers. Research found that parents/carers having open discussions about the internet with their children and co-creating rules for internet use is a promising parental strategy for protecting children from being cyberbullied (Elsaesser et al., 2017). Restricting their children's online activities alone may be ineffective and could put young people at greater risk for cyberbullying others or negative bystander behaviours (i.e., actions taken by witnesses of cyberbullying that either harm or don't help someone who is being cyberbullied).

Figure 1. Shared risk and protective factors for cyberbullying others and being cyberbullied

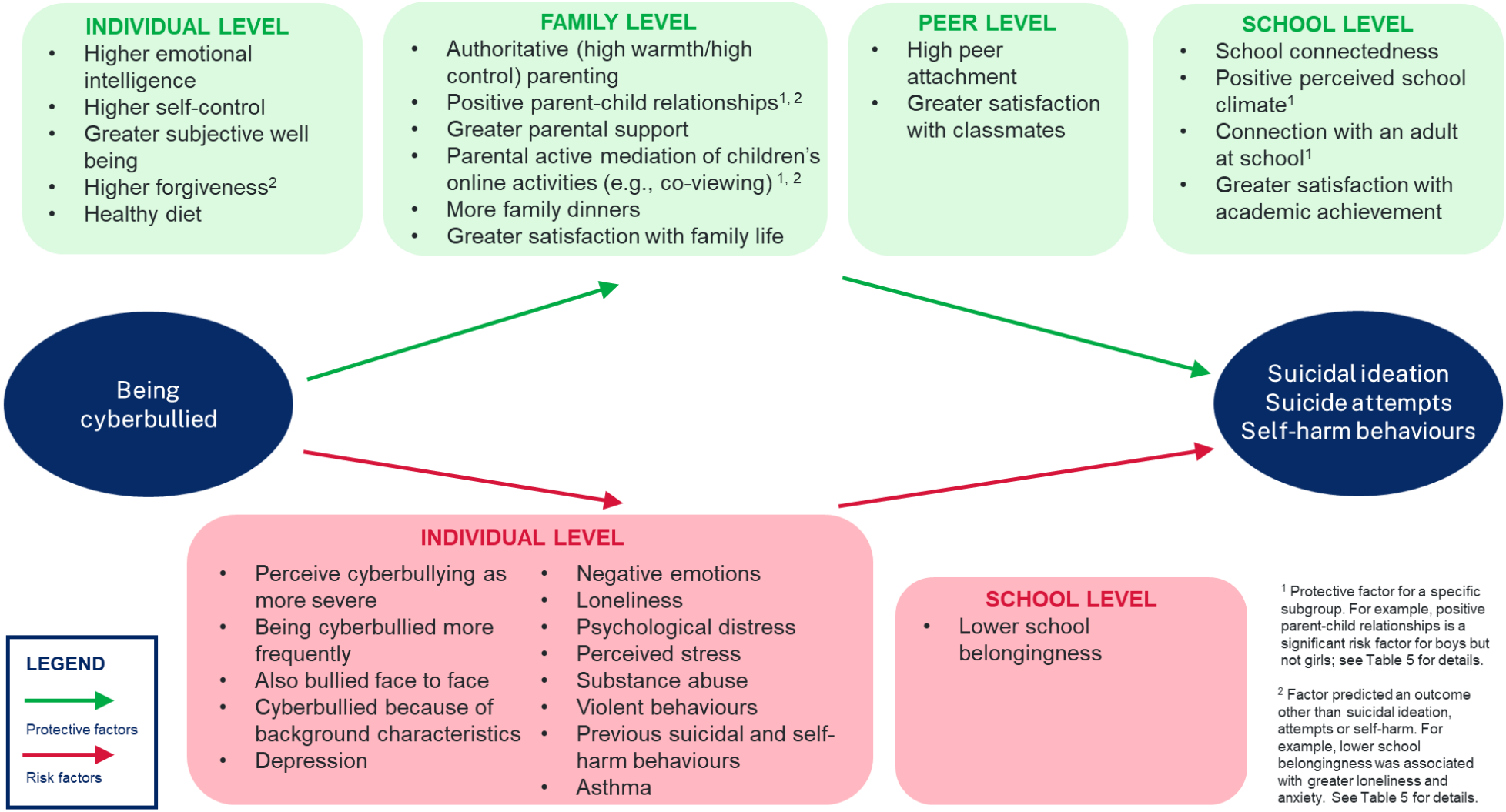


For definitions of concepts, refer to 'Terms used in this report'

Finding 1b. Cyberbullying negatively impacts children's and adolescents' wellbeing. It can also negatively impact student outcomes and perceptions about school and community. Key protective factors for cyberbullying impacts are social and emotional skills, parental warmth and a greater sense of belonging at school.

- Children and adolescents who cyberbully others or are cyberbullied are at greater risk of suicide, self-harm, depression, anxiety, poorer self-esteem and drug and alcohol use (e.g., Evangelio et al., 2022).
- Being cyberbullied is associated with truancy and poorer academic achievement (Farrington et al., 2023).
- Children and adolescents from a variety of backgrounds show negative impacts of being cyberbullied. Mental health impacts may be greater for some subgroups, such as children and adolescents who are neurodivergent, experiencing mental health difficulties or both (Abregu-Crespo et al., 2023).
- Social and emotional skills can protect against cyberbullying impacts (e.g., Dorol-Beauroy-Eustache & Mishara, 2021; see Figure 2 for risk and protective factors for cyberbullying impacts).
- A greater sense of belonging at school, more positive relationships with peers and teachers, and having a connection with an adult at school are associated with lower risk of suicide among cyberbullied children (e.g., Dorol-Beauroy-Eustache & Mishara, 2021; Predescu et al., 2024; see Figure 2).

Figure 2. Risk and protective factors for selected cyberbullying impacts



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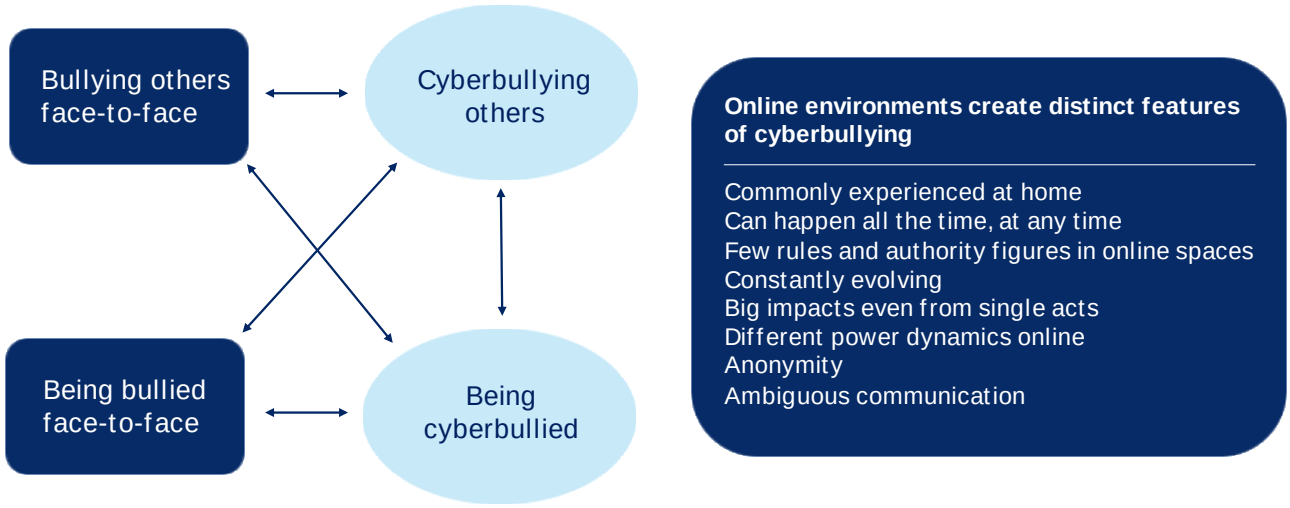
Implications of Finding 1:

- Protecting young people from cyberbullying is more than just a school's/education sectors' responsibility; it requires a whole-of-community response.
- Cyberbullying interventions will be more effective if they take children's and adolescents' broader social environments into account.
- Multi-layered approaches that consider multiple systemic influences and support multiple groups (e.g., parents, teachers and students) are needed.
- Additionally, students who are at greater risk of involvement in cyberbullying or online harms (e.g., students who are neurodivergent and/or are experiencing mental health difficulties; Abregu-Crespo et al., 2023) need targeted support.
- Reducing the prevalence and impact of cyberbullying through policies, procedures and practice can promote a greater sense of school belonging, feelings of safety at school and a greater sense of community safety.

Finding 2: Cyberbullying and face-to-face bullying are related but distinct behaviours. The online environment creates unique features associated with cyberbullying – features that not only make it challenging to detect cyberbullying, but also create barriers to reporting cyberbullying. Effective cyberbullying interventions raise awareness of these issues.

Cyberbullying and face-to-face bullying have similarities, and young people involved in face-to-face bullying are also likely to be involved in cyberbullying (e.g., Marciano et al., 2020; Walters, 2021). However, the accessibility of ICT, anonymity of users and other aspects of the online environment create unique features of cyberbullying (e.g., Dennehy et al., 2020; Pyzalski et al., 2022; see Figure 3).

Figure 3. Cyberbullying and face-to-face bullying are related but distinct behaviours



The online environment can make it challenging to detect cyberbullying and create barriers to reporting cyberbullying (e.g., Pardo-Gonzales & Souza, 2022). For example:

- Witnesses may misinterpret the cyberbullying as not harmful.
- Anonymity makes it difficult to know the identity of the person who is cyberbullying.
- Children and adolescents may perceive adults as poorly equipped to deal with cyberbullying due to a generation gap in ICT use.

A considerable portion of cyberbullying interventions (e.g., Vivolo-Kantor et al., 2021) acknowledge the multifaceted nature of online challenges students face today by tackling a broader spectrum of online safety issues. These include cyber-abuse, online grooming, substance use, face-to-face bullying, mental health concerns, and various other online and social challenges.

Implications of Finding 2:

- Addressing cyberbullying is unlikely to be a case of simply applying face-to-face bullying interventions. For cyberbullying interventions to be effective, they need to consider the distinct features of cyberbullying and broader online safety issues.
- However, common features of face-to-face bullying and cyberbullying interventions can be leveraged to promote multi-risk approaches to cyberbullying prevention. Moreover, this will save resources. As outlined below, such interventions typically share social-emotional learning and positive bystander education approaches.
- Addressing broader online safety and social behaviour issues can also help reduce cyberbullying incidents, highlighting the interconnectedness of online and offline behaviour. For example, creating a positive social environment can have a ripple effect on online interactions.

Finding 3: Robust evaluation research indicates that cyberbullying prevention programs are effective in reducing cyberbullying in school-aged students. Cyberbullying prevention programs can also have positive impacts on face-to-face bullying and other outcomes associated with cyberbullying.

- Research estimates that one case of cyberbullying is prevented for every 167 students exposed to cyberbullying intervention programs (Fraguas et al., 2021).
- School-based programs focused specifically on cyberbullying were found to have a higher average intervention effectiveness for cyberbullying relative to programs with a focus on general violence prevention (Polanin et al., 2022).
- Some programs also have positive impacts on outcomes associated with cyberbullying, such as reducing face-to-face bullying (Ferrer-Cascales et al. 2019); problematic internet use (Ortega-Baron, Gonzalez-Cabrera et al. 2021); truancy, peer aggression and improving wellbeing (Bonnell et al., 2020); prosocial peer behaviour (Ortega-Baron, Buelga, Cava et al., 2021) and positive school climate (e.g., Tirri et al., 2020).

Implications of Finding 3:

- It is likely that investing in cyberbullying interventions will have benefits for cyberbullying as well as broader related outcomes.

Finding 4: Social-emotional learning is a critical element of cyberbullying prevention.

- Social-emotional skills are protective factors for cyberbullying. For example, children and adolescents with:
  - better emotional management or higher self-esteem are less likely to be involved in cyberbullying (e.g., Agustiningsih et al., 2024; Chen et al., 2017).
  - greater self-awareness are less likely to be cyberbullied (Guo, 2016).
  - higher empathy are less likely to cyberbully others, and also appear to be more likely to engage in positive bystander behaviours (i.e., constructive actions taken by witnesses of cyberbullying including seeking to improve the situation for the person being cyberbullied (Zych et al., 2019A).
  - poorer self-reliance and problem-solving skills are less likely to be bystanders who intervene to help (Jeyagobi et al., 2022).
- Cyberbullying programs (e.g., Del Ray et al., 2019; Sahin & Ayaz-Alkaya, 2024) that incorporated social-emotional learning were found to be the most effective in achieving reductions in cyberbullying.
- Positive peer influence is a protective factor for both cyberbullying (Guo, 2016) and negative bystander behaviours (Jeyagobi et al., 2022).
- Among young people who are cyberbullied, those who have higher emotional intelligence or self-control have lower suicide risk (Dorol-Beauroy-Eustache & Mishara, 2021).

Implications of Finding 4:

- Emotion regulation, building empathy, social awareness and fostering positive communication skills are all crucial aspects of responsible online behaviour.
- Cyberbullying programs need to build skills related to:
  - self-awareness and self-management, such as emotional control and regulation, emotional intelligence, high self-esteem and social development (e.g., positive peer support, friendship)
  - social awareness and social management, such as building friendships, respectful relationships, empathy building, conflict resolution and positive peer interactions.

Finding 5. The most effective cyberbullying prevention programs address issues beyond cyberbullying to foster a safe and respectful online environment for students. These programs deliver content on social-emotional learning, cyberbullying education, digital citizenship and positive bystander education.

- Interventions lacking key elements like social-emotional learning, cyberbullying education, positive bystander education or digital citizenship education have consistently yielded non-significant results (e.g., Hajnal, 2021).

Implications of Finding 5:

- For optimal effectiveness, cyberbullying prevention programs need to incorporate a combination of four key elements:
  1. Social-emotional learning to equip students with the necessary skills,
  2. explicit cyberbullying education to raise awareness,
  3. positive bystander education to empower intervention, and
  4. digital citizenship education and digital literacy promoting responsible online behaviour.

  This multifaceted approach provides a strong foundation for fostering a safe and respectful online environment for students.

Finding 6. The most effective cyberbullying prevention programs are comprehensive and involve whole-school sustained action.

The most effective cyberbullying prevention programs typically:

- Use whole-school approaches aligned with evidence-informed frameworks such as the WHO Health Promoting Schools framework (Langford et al., 2015),
- Actively involve school staff, parents and families (e.g., Lan et al., 2022),
- Tailor programs to student demographics and needs, and informed by the perspectives and voices of students,
- Use learning formats that maximise student engagement with program content (e.g., teacher-led class discussion, peer collaboration, serious games and other novel digital platforms; Chen et al., 2023),
- Involve multiple sessions that reinforce learning

Most of the reviewed cyberbullying programs were Tier 1 (universal) interventions designed to be delivered to all students. Although the importance of early intervention and harm minimisation is widely acknowledged in the literature and in practice, few of the reviewed programs were Tier 2 (selective) and Tier 3 (indicated) interventions.

Implications of Finding 6:

- Cyberbullying needs to be addressed comprehensively as part of a whole-school approach – embedded into all school policies, procedures and practices such as wellbeing and technology use, i.e. not a standalone policy/practice.
- Cyberbullying interventions are more likely to be effective if they engage the entire school community in capacity building and staff in implementation support.
- Cyberbullying interventions are more effective if tailored to meet the online strengths, needs and behaviours of students.
- More research on Tier 2 (selective) and Tier 3 (indicated) approaches are needed to inform policy and practice on effectively implementing multi-tiered supports relative to student levels of vulnerability.

Considerations for strengthening policy and practice for NSW schools

Based on the review of cyberbullying evidence some considerations are provided to strengthen cyberbullying prevention and response policy and practice for NSW schools. These considerations address cyberbullying behaviour prevention and early intervention policy and practice, and professional learning resources as part of a multilevel approach to reducing cyberbullying behaviour and its harms for children and adolescents.

Considerations for policymakers

	Findings
Policy/guidelines	
• Provide clear policy guidelines to support school efforts to address cyberbullying.	6
• Provide technology and technology use policy/guidelines that enable safe and respectful technology use. This could include policies that support actions to limit student exposure to technology.	1, 6
• Review the role of cyberbullying behaviour and its impact on policies, guidelines and procedures for student re-engagement, attendance, enrolment and behavioural incidents and students with diverse learning needs. Develop guidelines for school leaders with suggested best practice on managing these areas.	1, 6
• Ensure policies/guidelines that address bullying behaviour also include cyberbullying behaviour. Provide clear advice on how to implement these policies/guidelines within other relevant policies/guidelines (e.g., discipline policy). Clarify legislation and areas of demarcation (e.g., regarding duty of care).	2, 6
• Consider the role of NESA and school sectors in enabling and promoting eSafety professional learning for teachers and professional scope of training, e.g., digital communication skill building and how to effectively respond to students who are cyberbullied or cyberbully others.	1, 6
Identifying priority areas	
• Review factors associated cyberbullying behaviour (e.g., risk and protective factors for cyberbullying others, being cyberbullied or negative bystander behaviour, as well as for cyberbullying impacts). For example, support actions to: - Explicitly teach students skills in self-control, as lower self-control is a risk factor for cyberbullying others and higher self-control reduces the impacts of being cyberbullied. - Build and maintain a positive school climate, which is protective for cyberbullying others, being cyberbullied and the impacts of being cyberbullied.	1

- Where appropriate, provide support to increase parent awareness of the impact of parental warmth on cyberbullying behaviours. Parental warmth is protective for cyberbullying others, being cyberbullied and the impacts of being cyberbullied.	
• Use longitudinal student data, such as the CESE 'Tell Them from Me' data to better understand NSW student risk and protective factors/predictors and impacts of cyberbullying. Where data are available, these analyses need to consider student sub-groups such as Aboriginal and Torres Strait Islander students, CALD students and students with diverse learning needs.	1
Partnerships and resource provision	
• Develop cross-government (e.g., involving Health, Communities and Justice, NSW Police) responses to cyberbullying prevention in partnership with the eSafety Commissioner and aligned with the National Anti-bullying Collective.	1
• Develop coordinated multi-agency approaches to issues related to cyberbullying, such as supporting students with diverse learning needs, student attendance and home schooling.	1
• Partner with the eSafety Commissioner to ensure social media organisations act to prioritise young people's online safety.	1
• Partner with the eSafety Commissioner to maximise school staff and families' use of quality evidence-based resources. For parents and carers, such resources could focus on supporting them to build digital communication skills and work with their children to effectively reduce their risk of online harms.	1, 6
• Partner with organisations such as the Australian Association of Special Education to identify actions to prevent bullying and cyberbullying among children and adolescents with diverse learning needs.	1
• Ensure cyberbullying intervention programs provided by school sector/systems include the explicit teaching of social-emotional skills that include self-awareness, self-management, social awareness and social management, such as friendship skills.	4
• Facilitate the regular dissemination to schools of contextually relevant information about emerging and ongoing online safety issues.	1, 6
Supporting schools to implement evidence-based cyberbullying interventions	
• Support school leaders (via resources and advice) to drive the implementation of comprehensive whole-school programs to reduce cyberbullying, that involve all members of the school community.	3, 6
• Provide advice to school leaders about effective ways to implement evidence-based whole-school cyberbullying interventions (as aligned with the World Health Organization's Health Promoting Schools framework),	3, 6

including how to effectively tailor available interventions to the needs of students, such as through the engagement of student voice. Provide guidance on how to meet the contextual needs of schools, such as regional and remote schools, primary and secondary schools and schools for special purposes.	
• Support schools (e.g., via resources and advice) to implement quality evidence-based digital literacy resources. These programs could be delivered through interactive modules, online courses, or gamified experiences. By providing readily available and scalable resources, policymakers can equip schools with tools to proactively address cyberbullying.	3, 6
• Showcase examples of effective approaches to social-emotional learning and how these can foster a positive school climate. Provide opportunities for schools to share their social and emotional learning practices with other schools.	4

Considerations for school leaders and teachers

	Findings
School internal procedures, practices and best-practice guidelines	
• Promote relevant school guidelines, procedures and practices (e.g., induction and professional learning) to enhance staff understanding of what actions they need to take when a student reports cyberbullying, to help and reduce further harm. Policies need to also enable and encourage student help seeking, including addressing potential barriers to students reporting cyberbullying behaviour.	1, 6
• Use multi-tiered systems of support to identify early intervention practices (Tier 2) for students identified as at higher risk of online harms, and intensive support practices (Tier 3) for students experiencing cyberbullying difficulties (e.g., anxiety, depression) or engaging in cyberbullying (e.g., aggressive behaviours or demonstrating moral disengagement).	1, 6
• Ensure school leaders and staff have a common and shared understanding of cyberbullying prevention policies and positive peer and behavioural expectations to mobilise positive bystander behaviour. Positive bystander education reduces ambiguity about what positive bystander behaviour looks like and when and how to act. It empowers students to intervene effectively, potentially disrupting the cycle of cyberbullying and promoting a culture of responsibility.	5, 6

Priority areas	
• Ensure cyberbullying prevention programs provide a strong foundation to enable students to contribute to a safer and respectful online environment by incorporating a combination of four key elements: - social-emotional learning to equip students with the necessary skills, - explicit cyberbullying education to raise awareness, - positive bystander education to empower intervention, - digital citizenship education and digital literacy to promote responsible online behaviour.	5
• Ensure social-emotional learning is taught explicitly and meets students' developmental and learning needs across year levels (e.g., by reviewing/updating curriculum scope and sequence and unit/lesson plans).	4
• Build and maintain positive school climate and a strong sense of belonging, focussing on building positive relationships between students and school staff (e.g., home room, house activities, ensuring the school community has universal positive regard where everyone is treated with respect, fairness and kindness). Creating a positive social environment can have a ripple effect on online environments.	1, 2
• Focus on pedagogy i.e., positive ways to teach students, as much as the content to teach, to build sense of safety and trust in the classroom. This could be achieved through targeted professional learning resources and opportunities.	1, 6
Staff professional learning	
• Ensure school staff are adequately trained to identify cyberbullying behaviour and understand the serious effects of cyberbullying on the wellbeing of both students who cyberbully others and students who are cyberbullied, and how this harm can be minimised.	1, 6
• Ensure school staff are adequately trained to implement informal (e.g., using their lunch duty time to get to know more students) and formal actions (e.g.: explicit teaching and student practice of social and emotional skills) in the school to help reduce the likelihood of students experiencing cyberbullying.	1, 6
• Ensure school staff are adequately trained to identify contextually relevant risk and protective factors for student cyberbullying behaviour and use this insight to tailor teaching and support for students.	1, 6
• Partner with the eSafety Commissioner to increase school staff access to professional learning resources to strengthen their skills to prevent or reduce student cyberbullying behaviour.	1, 6

Partnerships	
• Partner with and help build the skills of parents and other adults in the community (e.g., sports coaches) to know how to effectively respond to cyberbullying behaviour, especially for students who are at higher risk of experiencing cyberbullying behaviour.	1, 6
• Encourage two-way communication between school and parents/carers about online safety. Partner with the eSafety Commissioner to increase parents'/carers' access to resources to help them to identify signs of cyberbullying involvement and know how to support their children if impacted by cyberbullying.	1, 6
• Support families to access community resources that can help them to create a positive and supportive home environment that fosters open communication about online behaviour, given cyberbullying is more likely to happen outside school hours than at school.	1, 6
• Partner with the eSafety Commissioner to increase parents'/carers' access to cyberbullying prevention workshops and training sessions that equip them with knowledge and skills to help their children to engage in positive bystander behaviour and promote responsible online behaviours.	1, 5, 6
Implementation approaches	
• Address cyberbullying behaviour comprehensively as part of a whole-school approach – embedded into relevant school policies and practices such as wellbeing and technology use, i.e., not a standalone policy/practice. Create a cyberbullying prevention plan that incorporates all aspects of school life, including curriculum, climate, procedures and policies. Engage the entire school community in capacity building and staff in implementation support to address the multifaceted nature of online challenges faced by students.	6
• Tailor cyberbullying learning opportunities to student and school context to maximise their effectiveness by addressing student strengths and needs, their unique demographics and online behaviours.	6
• Ensure school actions are co-designed with students to increase their relevance to students and to elicit higher levels of student engagement. Consider digital health formats/interventions, serious games, online forums, peer tutoring, group discussions, and collaborative activities that help students to develop and apply cyberbullying prevention knowledge and skills.	6
• Ensure cyberbullying programs are monitored to understand if they are of sufficient duration to sustain outcomes. Interventions need to be more comprehensive than information dissemination.	6

Considerations for parents

Although this report is primarily for NSW education policymakers and schools, considerations for parents are provided below. These considerations could be used to formulate communications to support parent/carer engagement.

	Findings
Supporting online safety	
• Use parent/carer resources, such as those provided by the eSafety Commissioner, to support young people to have safer and more positive online experiences. Such resources include practical information for parents and carers about: - having open conversations with their children about online behaviour, - helping children manage their screen use to achieve a healthy balance between online and offline activities, - co-creating rules with their children about how digital devices are to be used in the home, - how to identify if their children may be experiencing or involved in cyberbullying and what action to take if they are involved, - current online safety issues, including those associated with new apps, online gaming platforms and social media sites.	1
Engaging with school	
• Cyberbullying and face-to-face bullying often co-occur, and cyberbullying is more likely to happen outside school hours. Regular two-way communication between home and school can provide a shared understanding and shared responsibility for issues affecting the wellbeing of children. This is an important process for detecting and addressing cyberbullying.	1, 2
• School-based initiatives to keep children safe online are more effective when parents and carers are involved. By engaging with these initiatives, parents and carers can support their children's learning about online safety.	1, 6

Considerations for future cyberbullying prevention research

Prevalence trends

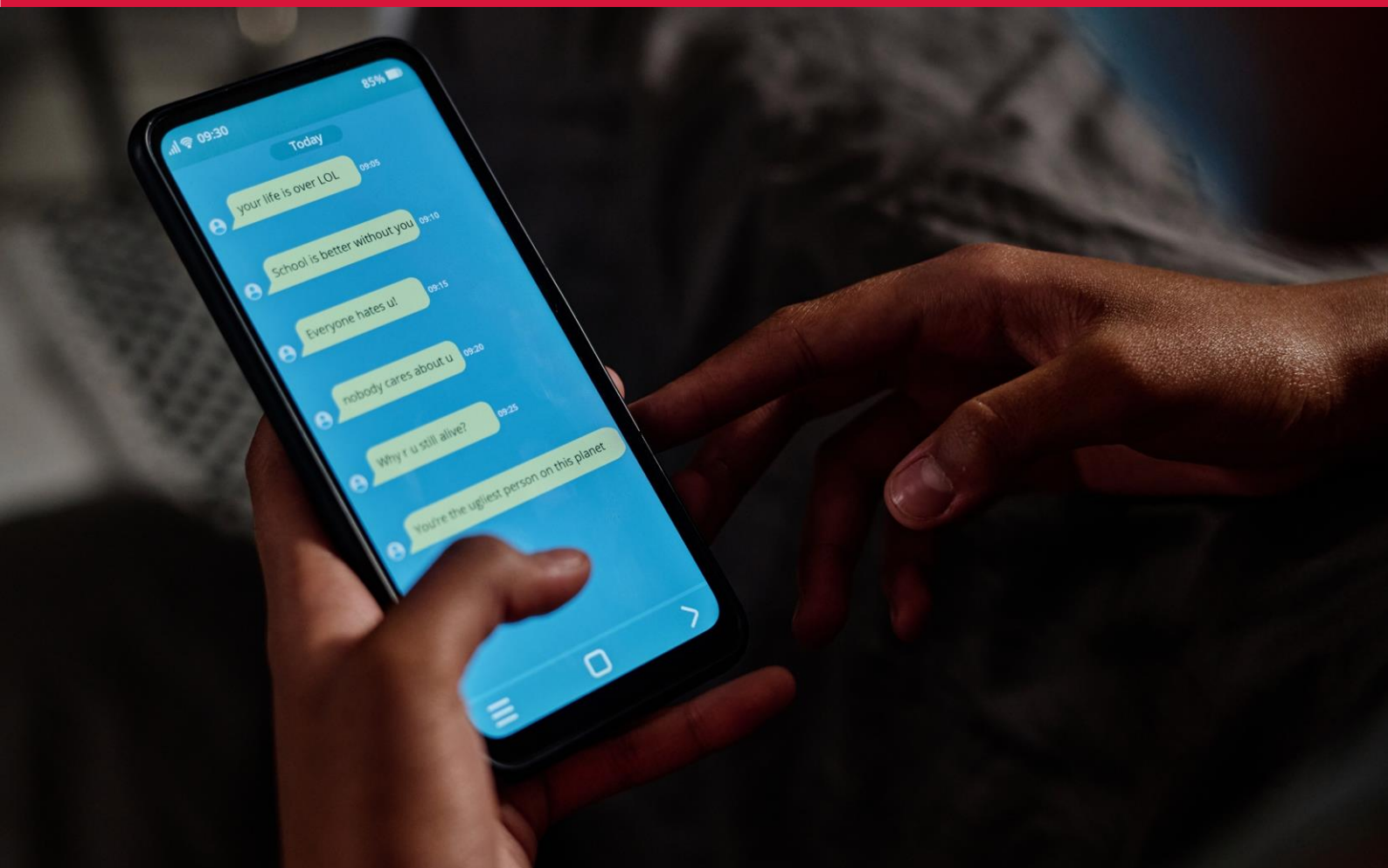
- Collect longitudinal data to understand how cyberbullying behaviour is evolving, e.g., the nature of social media, types of technology, impact of negative influencers, and the extent to which the NSW schools' mobile phone ban has affected the prevalence and impact of this behaviour.
- Conduct research to better understand what specific background characteristics are associated with greater harm from cyberbullying and to determine risk and protective factors for students with diverse learning needs, LGBTQIA+, CALD backgrounds and Aboriginal and Torres Strait Islander students.
- Conduct longitudinal research to better understand the casual impacts of cyberbullying by intensity, type, frequency and duration.
- Provide ongoing research updates to identify emerging trends in cyberbullying behaviours to adapt practices according to changing trends in technology use among children and young people.

Intervention insights

- Conduct longitudinal research addressing family, peer and school factors to inform cyberbullying interventions (given students tend to experience more cyberbullying outside school hours than at school) to better understand modifiable family factors and to identify opportunities to prevent and reduce harm from cyberbullying.
- Conduct research to determine the effectiveness and contextual relevance of international cyberbullying intervention research recommendations with Australian school staff and students.
- Conduct research focused on risk and protective factors to identify opportunities for prevention and early intervention for primary school-age students, given most research has been conducted with secondary and tertiary students.
- Conduct research investigating the impact of cyberbullying on bystanders and the impact of positive bystander responses on cyberbullying behaviour, given most research has investigated only negative bystander responses.
- Conduct research investigating the family-level consequences of their child being involved in cyberbullying.
- Conduct regular monitoring, and evaluation of the extent and nature of implementation and subsequent effectiveness of cyberbullying prevention programs and resources.
- Given the research to date is mostly individual-focused, conduct further research to understand the extent to which social influences such as school, peers, family and community affect the prevalence of cyberbullying behaviour and the severity of its consequences.

2

Introduction



Introduction

There is growing community concern in Australia about the impacts of digital technology[1], particularly social media, on children and adolescents (Lavoipierre & Florance, 2024). On average, Australian teenagers spend 14.5 hours a week online and use four social media services (eSafety Commissioner, 2021). Two thirds of 13–17-year-olds and a quarter of 8–12-year-olds report using Instagram or Snapchat (eSafety Commissioner, 2018; Humphry et al., 2023). Compared to previous generations, children and adolescents view digital technology as an essential part of their daily life. This technology permeates many aspects of their lives including their family, friends, education and employment (An & Reigeluth, 2011).

Using digital technology has both benefits and costs – whether it helps or hurts the development of children and adolescents depends on what and where technology is used, how it is used, for how long and with whom. Online environments may have beneficial outcomes when used positively, including improved learning and creativity (Plowman et al., 2011), enhanced digital literacy skills (Holloway et al, 2013), and more frequent social contact to share experiences, build friendships and maintain social connections (Symons et al., 2017).

Conversely, frequent use of technology can bring risks and challenges. This is particularly true for children and adolescents, who are still developing physically, socially, and emotionally and building their capacity for effective decision-making (Yang et al., 2021). While children and adolescents have some knowledge of online safety strategies, they often don't have the ability to prevent or manage digital risks. The pervasiveness, portability, frequency and ease of using digital technology means that parental filters and controls alone cannot ensure their children's safety online. Also, many adults including parents and teachers report limited confidence and competence to regulate and support their children's safe use of digital technology (Sanders et al., 2016).

Cyberbullying behaviour (defined in Box 1) is one of the most prevalent online harms experienced by adolescents. Certain features of online environments, such as social media, can amplify the harm of cyberbullying behaviours. Features like greater anonymity, an unlimited audience, lack of non-verbal communication, 24/7 access, and the potential for negative online behaviour to not be noticed by parents and teachers can increase harm from cyberbullying behaviour (Heirman & Walrave, 2008).

[1] 'Digital technology' is used as an umbrella term to capture all the information and communication technology used by children and adolescents, particularly mobile phones and computers, and social media and other apps.

Box 1.

Cyberbullying

In this report, 'cyberbullying' refers to aggressive behaviour by an individual or group using digital technology to intentionally misuse power to support repeated, and hostile behaviour, to harm a person or group who cannot easily defend themselves. Single incidents and conflict or fights between equals, whether in person or online, are not defined as bullying.

The most common cyberbullying behaviours include:

- sending or posting mean, threatening or hurtful messages such as on social media
- spreading rumours or gossip online to damage a person's reputation
- circulating false or embarrassing information
- posting or sharing private images or revealing private information without permission
- impersonating someone online to harm their reputation
- intentionally stalking or excluding someone from an online group
- creating hate groups or websites targeting a specific person or group
- engaging in heated arguments or aggressive exchanges online
- repeatedly harassing by sending threatening or mean messages to an individual.

It is important to note as part of this cyberbullying definition that:

- 'Intentionality' can be difficult to determine in online environments because of the lack of verbal or physical cues.
- A single online hurtful behaviour can feel repeated if it continues to be distributed.

The online environment also influences power imbalances as perpetrators can cyberbully anonymously and as a result, the person being cyberbullied may feel a lack of control and unable to escape the situation. Anonymity also may enable those who cyberbully others to be nastier, whilst simultaneously being less likely to feel empathy for the person being cyberbullied because they rarely witness the harm they caused.

While cyberbullying harms can occur via any digital technology, numerous studies have found that social media is the most used site for this behaviour (Aizenkot, 2020; Craig et al., 2020). Robust associations have also been found between cyberbullying and other online behaviours, such as sexting, revenge pornography, and online grooming and the interrelationship between cyberbullying and internet addiction (Gámez-Guadix & Mateos-Pérez, 2019).

Cyberbullying is a significant concern in Australia

It is not clear whether bullying behaviours are increasingly moving online, as research shows that most children and adolescents who are experiencing face-to-face bullying are also experiencing cyberbullying (Modecki et al., 2014). However, evidence suggests that cyberbullying increased globally during the COVID-19 pandemic (Karmakar & Das, 2021) as children, adolescents and adults had greater access to technology and social media (OfCom, 2023).

Bullying remains a significant problem in Australia:

- In the 2022 Programme for International Student Assessment (PISA), students in all Australian states and territories reported higher levels of bullying than the OECD average (De Bortoli et al., 2024).
- In the 2019 Trends in International Mathematics and Science Study (TIMSS), 62% of Australian Year 4 students reported they are being bullied at school at least monthly, decreasing to 42% by Year 8 (Mullis et al., 2019).
- A 2019 meta-analysis of 46 studies found that among Australian children and adolescents, 25% reported being bullied face-to-face, 7% reported being cyberbullied and 3.5% reported they cyberbullied others (Jadambaa et al., 2019).

Cyberbullying also affects children and adolescents beyond being a target. Seventy-five per cent of adolescents report witnessing cyberbullying while online, and a similar proportion report knowing a friend or sibling who is being cyberbullied (Popovac & Fine, 2018). Unlike face-to-face bullying, cyberbullying seems to peak at ages 13-15 years and occurs equally among boys and girls, albeit they experience different types of cyberbullying (Sorrentino et al., 2019).

There is a pressing need to better understand this public health concern and how it can best be addressed. Synthesising the rapidly growing research literature on cyberbullying behaviour can help to inform how to best direct efforts to reduce cyberbullying.

Evidence matters to reduce cyberbullying

This report synthesises robust evidence to help understand what actions can be taken to address cyberbullying behaviour. Keeping students safe from cyberbullying and other negative online experiences, especially from social media use, is a priority across NSW schools. This report provides education sector policymakers and stakeholders with the latest insights about children's and adolescents' cyberbullying behaviours and how school staff and families can best prevent and respond to these harmful behaviours.

Research included in this report explicitly addressed cyberbullying behaviour among primary and secondary school-age students (approximately 5-18 years), was conducted in Australia and internationally and published in English since 2019. From a search that returned 1,103 unique peer-reviewed journal article records, 105 articles were identified as directly related to cyberbullying behaviours among children and adolescents. These articles, which drew evidence from a combined total of approximately 2,300 studies, were reviewed to provide a comprehensive, timely and current synthesis of the evidence (for further information, see Method).

The evidence synthesis incorporates findings from meta-analyses and systematic reviews (considered the highest quality of research synthesis available) and high-quality primary studies including those using randomised controlled trials. The review process used a confidence level in the evidence for specific findings, based on those provided by the Australian Education Research Organisation (AERO). Where possible, estimates of effect size are included to indicate the strength of the associations or effects. Findings from qualitative research are also summarised to capture rich insights and supplement findings from quantitative research. For an explanation of research concepts used in this report, see Box 2.

The terms 'children and adolescents' are used to represent all school-age children (5 to 10 years) and adolescents (11 to 18 years). Children and adolescents who are 'cyberbullied' or who 'cyberbully others' are the terms used to refer to those who have been targeted by bullying online and those who perpetrate this cyberbullying respectively.

Box 2.

Research concepts

Confidence level: Provided by the Australian Education Research Organisation (AERO), confidence levels are used to convey the degree to which the evidence for a particular education program, practice or policy is rigorous and relevant. Confidence levels range from Level 1 (low) to Level 4 (very high). In this report, estimated confidence levels are provided for specific findings.

Effect size: An estimate of the strength of a particular effect. For example, the degree to which a cyberbullying intervention reduces the prevalence of cyberbullying.

Meta-analysis: Research that uses statistical methods to combine data from multiple studies about the same research question to produce a more reliable estimate of the size of the effect of an intervention.

Randomised controlled trial: A trial of a particular approach that is set up to allow researchers to test its effects. In a randomised controlled trial, participants are randomly assigned to one of two groups: one receiving the approach that is being tested (the experimental group), and the other receiving an alternative approach or no approach (the comparison group or control). After the trial period, differences between the groups can typically be attributed to the approach being tested. Researchers who use randomisation must consider ethical concerns, such as whether it is ethical to withhold treatment from subjects in the comparison group.

Systematic review: A type of literature review that provides a robust answer to a particular research question by identifying and synthesising all the relevant academic research. Systematic reviews use rigorous and transparent methods to search for and summarise studies. These methods aim to reduce bias and are reported in such a way that another researcher should be able to reproduce the results following the same method. Systematic reviews will also identify when different studies about the same issue have found different results.

Taken or adapted from the Australian Education Research Organisation (AERO)'s website, June 2024 (https://www.edresearch.edu.au/summaries-explainers/explainers/key-concepts-research)

Structure of this report

Findings from the evidence synthesis of cyberbullying research are summarised in three chapters.

The report addresses:

1. **Risk and protective factors for cyberbullying**

Identifying modifiable risk and protective factors that can exacerbate or ameliorate the harm from cyberbullying can help to identify opportunities to prevent or reduce the potential negative effects of cyberbullying.

This chapter:

- explores relevant demographic individual-level risk and protective factors robustly associated with cyberbullying, as well as modifiable contextual factors linked to the home, peer groups and school.
- briefly compares risk and protective factors for cyberbullying and face-to-face bullying behaviours.
- considers the individual, family and peer risk factors and features of cyberbullying incidents associated with negative bystander responses to cyberbullying behaviour.

2. **Impacts of cyberbullying**

This chapter:

- describes the surprisingly similar consequences or impact of cyberbullying others and being cyberbullied on children and adolescents.
- identifies risk and protective factors that can enhance or reduce these impacts.

3. **Cyberbullying prevention interventions**

Given cyberbullying behaviour typically occurs off-campus, outside of school hours, and/or using personal devices, interventions to reduce cyberbullying harm can often blur the boundaries of supervision and responsibility for school staff, parents and other adults who care for children and adolescents.

This chapter:

- describes the key components of primarily school and a few home- and app-based cyberbullying interventions and their effectiveness as well as considerations for implementing cyberbullying interventions.
- highlights that while whole-school and classroom actions taken by school staff are effective, these actions need to be holistic and actively engage all relevant stakeholders in schools, homes, and the wider community.

Each section of this report concludes with implications and considerations to inform cyberbullying prevention policy and practice. These implications and considerations are provided to promote discussion and action by school leaders and staff, children and adolescents and their parents/carers, and the community to implement evidence-based holistic online safety prevention and early interventions.

A common finding across this review is the strong inter-relationship between cyberbullying and face-to-face bullying – sharing similar risk and protective factors and psychological, emotional, behavioural, social and school achievement consequences, and hence similar policy/guidelines and practice responses (Marciano et al., 2020). However, the results of the review also highlight that cyberbullying has unique characteristics (e.g., anonymity of online environments) that need to be addressed in interventions (e.g., digital citizenship training).

This report demonstrates there are important whole-school actions policy makers, practitioners and parents/carers can take that will effectively reduce cyberbullying behaviour among children and adolescents. These actions need to involve children and adolescents, be consistent and comprehensive using quality evidence-based online safety prevention and early intervention resources that build capacity and protect and promote the development, wellbeing and achievement of our most precious resource.

Limitations

This review represents a comprehensive synthesis of the literature on cyberbullying interventions, rather than a systematic review or meta-analysis. While it includes a wide range of studies, the primary focus of this synthesis was specifically on examining the effectiveness of cyberbullying prevention interventions and their associated components. Other reviews of studies documenting risk and protective factors and implementation considerations were only included if they were found as a part of this overall search strategy. Therefore, primary studies or reviews of studies were excluded if they did not focus on cyberbullying interventions specifically.

The search strategy was deliberately limited to publications from 1 January, 2019 to 1 July, 2024, due to the extensive body of literature reviews conducted prior to this date. This limitation may exclude some relevant earlier research. The scope of the research review was limited to the past five years to ensure it investigated ways to support policy and practices that are relevant to young people's (and adults') current online experiences.

Finally, the focus on interventions for school-age students means that other important aspects of cyberbullying, such as its prevalence, psychological impact, or the role of different stakeholders, are not comprehensively addressed in this review.

Despite these limitations, this comprehensive synthesis provides a valuable overview of current evidence-based practices for cyberbullying interventions, offering practical guidance for policymakers, educators and other practitioners working to prevent and mitigate the harm caused by cyberbullying.

3

Method

Method

This section provides an overview of the methods used for the evidence review.

Aim

This research review aimed to provide an overview of the current state of evidence for cyberbullying behaviour and how to prevent or reduce harm for school-aged students. The overarching aims were to review and synthesise:

1. evidence investigating the key risk and protective factors at the community, school, family, peer, and individual student levels and the impacts associated with cyberbullying involvement
2. the state of evidence regarding effective policy and practice actions to prevent or reduce harm from cyberbullying among children and adolescents.

Research literature included in the review

This report incorporates findings from 105 primary studies or reviews about cyberbullying among children or adolescents drawn from a search identifying 1103 unique articles. Other online behaviours (e.g., online grooming) were not the focus of this review and were only included when the reviewed research also examined cyberbullying as an outcome.

The systematic process used to identify articles to be included in the review is described below.

Search strategy

To identify literature for the evidence review, a search was undertaken on PsycINFO (psychology), ERIC (education) and Web of Sciences (general sciences) limited to peer-reviewed academic publications from (1 January 2019 – 1 July 2024).

Search terms were:

A. cyberbull* OR cybervic*

B. child* OR adoles* OR youth* OR middle school OR elementary school OR high school OR secondary school OR primary school or specialist school or public school OR student OR teacher

C. prevention* OR intervention* OR program*

Results of the search comprised four categories of journal articles within the scope of this review:

1. **Meta-analyses and systematic reviews of risk and protective factors and/or impacts of cyberbullying**: These articles were evidence syntheses focusing on the risk and protective factors and impacts of cyberbullying for school-aged children and adolescents. The meta-analyses provided effect sizes to estimate the size of the association between risk and protective factors and cyberbullying behaviours.
2. **Meta-analyses and systematic reviews of cyberbullying interventions**: These articles were evidence syntheses focusing on evaluating the effectiveness of interventions or practice for preventing cyberbullying in school-aged students. The meta-analyses provided effect sizes to estimate the size of the impact of the interventions on reducing cyberbullying. Systematic reviews without meta-analysis provided supporting contextual information for the review.

3. **Primary evaluation studies of cyberbullying interventions**: These articles evaluated the effectiveness of specific interventions or practices for preventing cyberbullying in school-aged children. They used quantitative or mixed (quantitative and qualitative) methods, with some studies providing effect sizes for the interventions. Qualitative studies provided other information which incorporated case studies of cyberbullying interventions.
4. **Primary studies examining implementation and process elements of cyberbullying interventions**: These articles used qualitative methods to examine the characteristics of interventions and their implementation.

Estimates about the size of the impact of the cyberbullying interventions were drawn from the papers that reported effect sizes (i.e., a subset of papers from categories 2 and 3). Qualitative studies examining the features of interventions and their implementation were included to provide deeper contextual insights.

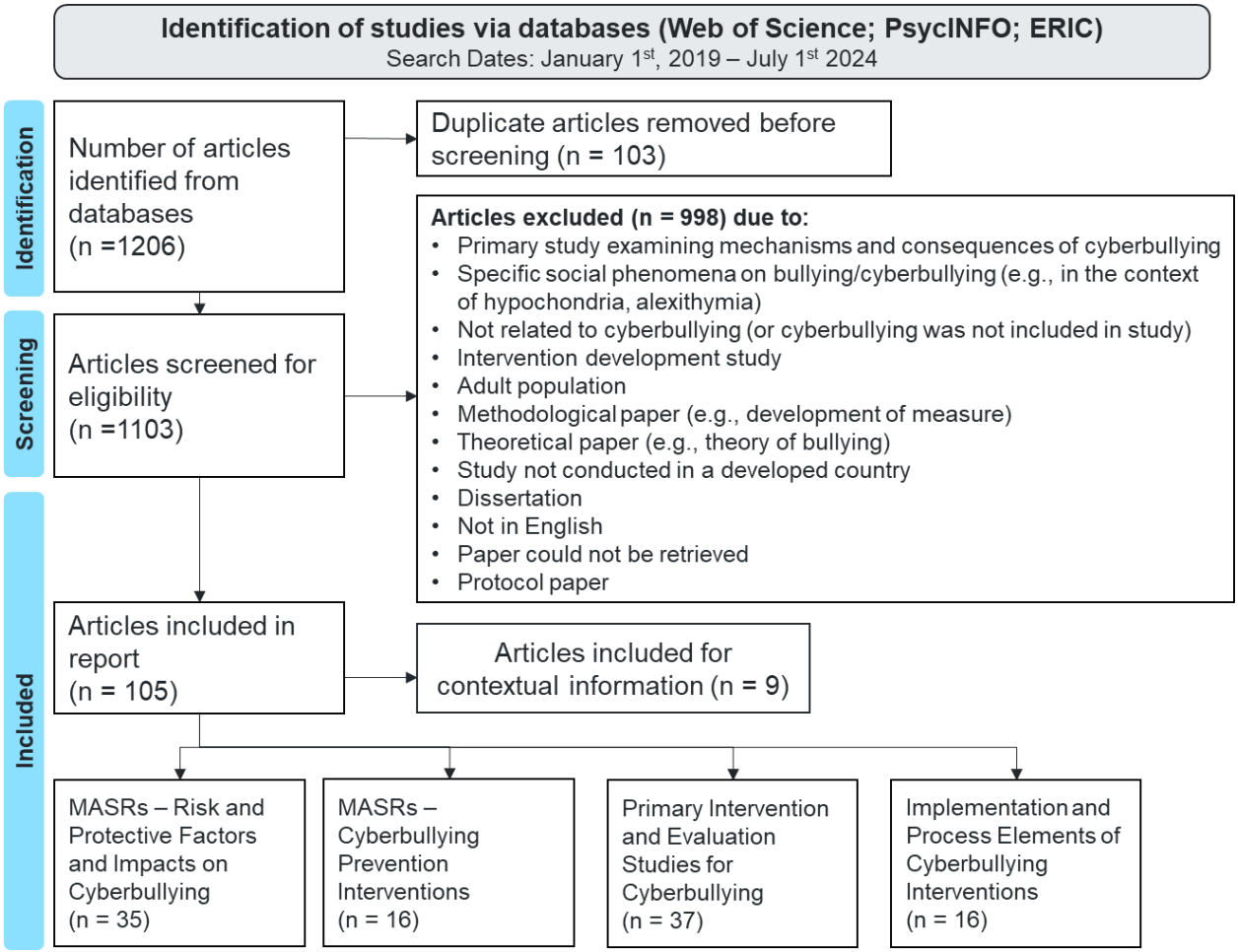
Screening process

To source literature for the evidence synthesis, titles and abstracts from the unique records were screened for eligibility. The full texts of eligible articles were then reviewed, and data extracted. Nine additional articles (not identified from the search) were reviewed for contextual information to support the review.

The screening process is shown Figure 4 and described further in Appendix 1.

Key findings from the 105 included articles were extracted and summarised in the remaining chapters of this report.

Figure 4. Screening process for the evidence review



4

Risk and protective factors for cyberbullying

Risk and protective factors for cyberbullying

This chapter outlines individual, family, peer and school factors that contribute to or reduce cyberbullying among children and adolescents. It presents factors for three cyberbullying roles: cyberbullying others, being cyberbullied and witnessing cyberbullying as bystanders. Children and adolescents can move in and out of cyberbullying roles at different times in different situations. Findings are presented in two sections:

1. Risk and protective factors for cyberbullying others and being cyberbullied.
2. Factors associated with negative bystander behaviours—that is, behaviours that encourage cyberbullying such as not responding or joining in.

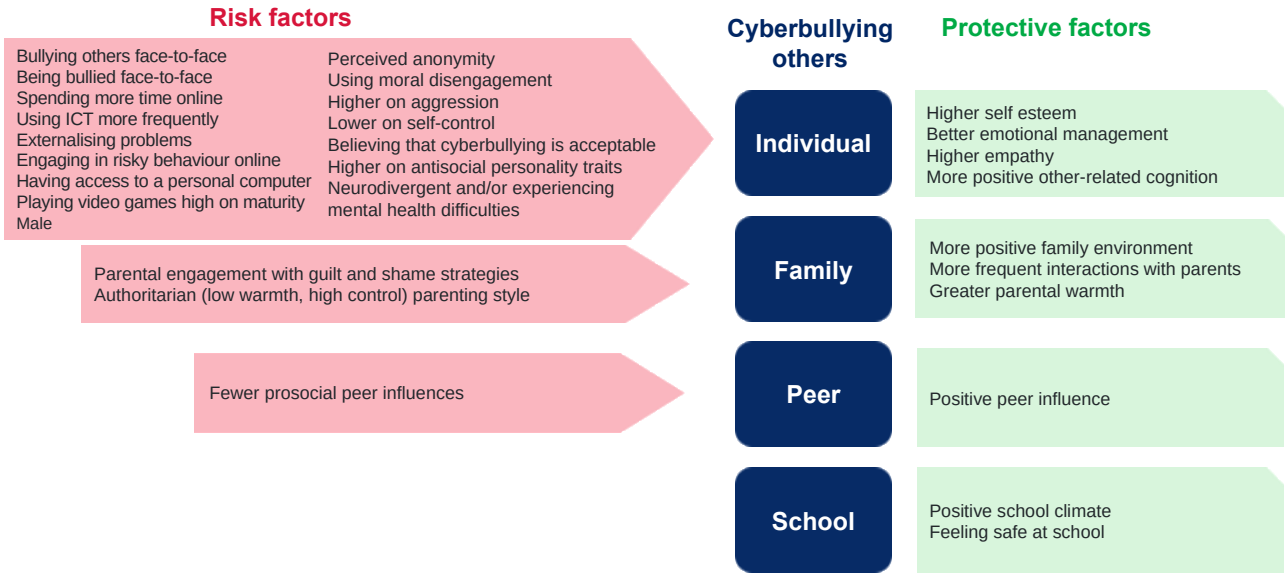
Key findings

- **Involvement in face-to-face bullying increases the risk of cyberbullying.** Young people who are bullied face-to-face are more likely to be bullied online. Young people who bully others face-to-face are more likely to bully others online. A considerable portion of young people who are bullied (face-to-face or online) also bully others (face-to-face or online). Moreover, bullying others (face-to-face or online) and being bullied online are associated with negative bystander behaviours.
- **Socio-emotional factors are associated with cyberbullying and bystander behaviours.** Some factors, such as self-esteem and emotional management skills are protective factors for both cyberbullying others and being cyberbullied. High empathy is associated with lower likelihood of cyberbullying others and positive bystander behaviour. Using moral disengagement (i.e., cognitive processes that enable people to behave unethically without feeling distressed) and having aggressive tendencies are associated with cyberbullying others and negative bystander behaviour. Young people who lack or perceive they lack skills to intervene are more likely to respond passively as bystanders.
- **Technology use and features of the online environment may facilitate cyberbullying**. More time spent online puts young people at greater risk for cyberbullying others and being cyberbullied. Lack of rules and authority figures in online spaces, perceptions of anonymity and ambiguity of online communications may all increase the likelihood of cyberbullying others. Ambiguity may also make it more likely that bystanders will misinterpret cyberbullying as not harmful.
- **Only some types of parental monitoring of their children's online activities appear to be beneficial.** Having open discussions about the internet with their children and co-creating rules for internet use is a promising strategy for parents/carers to protect their children from being cyberbullied. As a parent/carer strategy, restricting children's online activities may be insufficient and could increase their risk of cyberbullying others or engaging in negative bystander behaviours. A generation gap in ICT use means that parents/carers are not always aware of the risks of cyberbullying, which is constantly evolving alongside new platforms and apps.
- **Peer influences are important.** Positive peer influence may protect young people from cyberbullying others or being cyberbullied. Children's and adolescents' bystander responses depend on how other bystanders are responding, perceived peer expectations and whether they have close relationships with the people involved in the cyberbullying incident. They may not intervene if they fear they too will be cyberbullied.
- **School culture may protect children and adolescents from cyberbullying**. Children and adolescents who experience a positive school climate or feel safe at school are less likely to cyberbully others or be cyberbullied.

Cyberbullying others and being cyberbullied: risk and protective factors

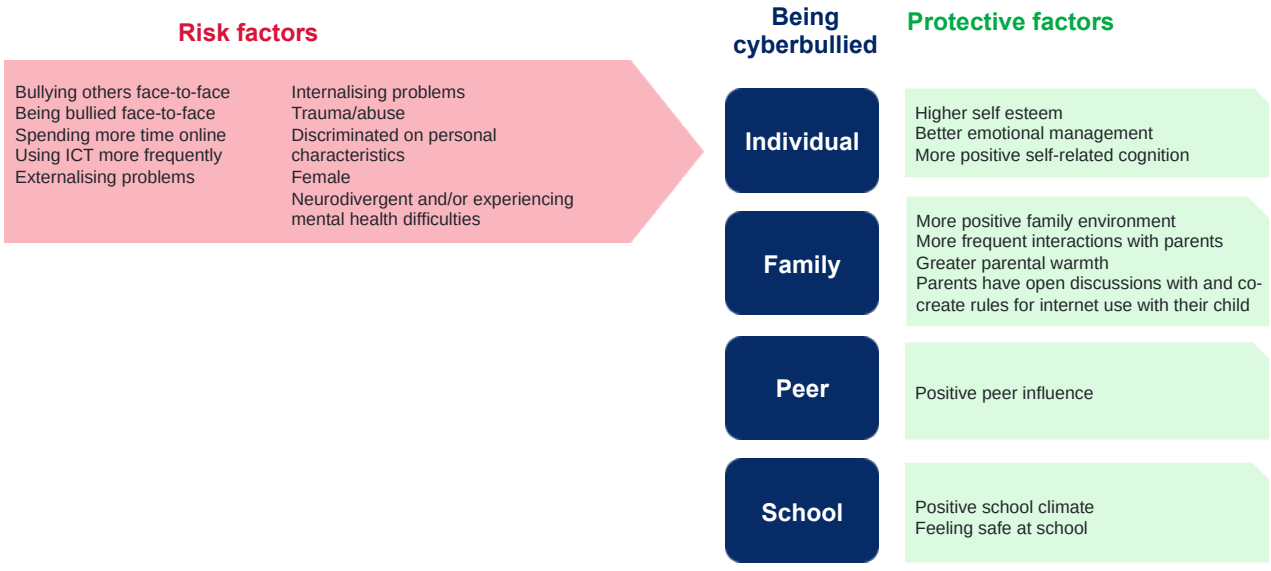
The review found several factors were associated with cyberbullying others, being cyberbullied or both roles. Key factors are summarised below and outlined in Figures 1 (see Executive Summary), 5 and 6, and in Table 1.

Figure 5. Risk and protective factors for cyberbullying others



For definitions of concepts, refer to 'Terms used in this report'

Figure 6. Risk and protective factors for being cyberbullied



For definitions of concepts, refer to 'Terms used in this report'

Individual level factors

- **Other bullying involvement** – Children and adolescents who bully others face-to-face are at greater risk of bullying others online. They are also more likely to be bullied (face-to-face or online). Children and adolescents who are bullied face-to-face are more likely to be bullied online and bully others (face-to-face or online).
- **Technology use** – Children and adolescents who spend more time online and use ICT more frequently are at greater risk of both cyberbullying others and being cyberbullied. Children and adolescents who have access to a computer in a private space, engage in risky behaviour online or play video games rated high on maturity are more likely to cyberbully others.
- **Perceptions about online environments and behaviour** – Children and adolescents who perceive themselves and others as anonymous online, as well as children and adolescents who believe that cyberbullying is an acceptable way to behave online, are at greater risk of cyberbullying others.
- **Social and emotional protective factors** – Children and adolescents with higher self-esteem or better emotional management skills are less likely to cyberbully others or be cyberbullied. Higher empathy and more positive attitudes about others are protective factors for cyberbullying others, but not for being cyberbullied. Greater self-awareness and more positive self-related attitudes are protective factors for being cyberbullied, but not for cyberbullying others.
- **Social and emotional risk factors** – Using moral disengagement is a risk factor for cyberbullying others. These cognitive processes may enable children and adolescents to cyberbully others without feeling unethical or distressed. Children and adolescents who have lower self-control, more aggressive tendencies, or anti-social personality traits (such as hostility, impulsivity and other traits associated with antisocial personality disorders) are more likely to cyberbully others. Depression, trauma and being discriminated against based on personal characteristics are all linked to being cyberbullied. Engaging in delinquent, defiant and rule-breaking acts are associated with both cyberbullying others and being cyberbullied.
- **Demographics and background** – International research suggests that boys are more likely to cyberbully others and girls are more likely to be cyberbullied. However, in Australian research these gender differences are not significant. Children and adolescents who are neurodivergent and/or experiencing mental health difficulties are more likely to cyberbully others and be cyberbullied. Individuals who are neurodivergent may be more likely to engage in or experience cyberbullying behaviour due to social and communication differences (e.g., they may not know that their actions would be considered cyberbullying) and executive function challenges (Abregú-Crespo et al., 2024). Findings about age and racial/ethnic background are mixed (see Appendix 1), indicating there is insufficient evidence to recommend that cyberbullying interventions be developed for children and adolescents with specific ethnic backgrounds.

Family level factors

- **Family environment and parental warmth** – Children and adolescents who have a positive family environment, more frequent interactions with parents or experience greater parental warmth are less likely to cyberbully others or be cyberbullied. A low warmth/high control parenting style, characterised by a lack of empathy, caring and respect for their children combined with controlling and punishing parental behaviour, is a risk factor for cyberbullying others. Parenting that uses guilt and shame to pressure their children to behave in particular ways is also a risk factor for cyberbullying others.
- **Parental monitoring of online activities** – Collaborative strategies, such as parents having open discussions and co-creating rules for internet use, may protect their children from being cyberbullied. Such strategies actively involve children and adolescents in decision making about their online behaviours. Only restricting children's and adolescents' online activities does not appear to be effective and may be associated with greater risk for cyberbullying others.

Peer level factors

- **Positive peer influence** – Children and adolescents who report being accepted by peers, included by peers or popular with peers are less likely to cyberbully others or be cyberbullied. Having fewer prosocial peer influences is a risk factor for cyberbullying others.
- **Social norms** – Children and adolescents are more likely to cyberbully others if they perceive cyberbullying is a normative behaviour. 'Social norms' are perceived informal rules that define acceptable and appropriate behaviour by most others within a group or community.

School level factors

- **Positive school climate** – Children and adolescents who report greater belonging at school, more positive school commitment, or that staff treat students with respect, fairness and kindness are less likely to cyberbully others or be cyberbullied.
- **School safety** – Feeling safe at school is a protective factor for both cyberbullying others and being cyberbullied.

Confidence in the evidence and strength of factors

Most of the reviewed factors are associated with cyberbullying (Level 2 confidence), but not causally. Factors may be both a cause and an effect of cyberbullying; some are reviewed in the next chapter describing the impacts of cyberbullying.

Some factors have been associated with cyberbullying in robust longitudinal research and are more likely to play a causal role in cyberbullying (Level 3 confidence). Findings show that children and adolescents who:

- have higher self-esteem are less likely to cyberbully others later.
- experience a positive school climate are less likely to be cyberbullied later.
- use ICT more frequently or are involved in face-to-face bullying are more likely to subsequently cyberbully others or be cyberbullied.
- have depression are more likely to be cyberbullied later.
- perceive themselves and/or others as anonymous online are less likely to go on to cyberbully others.
- have fewer prosocial peer influences are less likely to cyberbully others at a later timepoint (prosocial peers behave in ways that lead to positive outcomes people around them).
- have parents who are supportive and responsive are less likely to go on to cyberbully others.

Most of the associations with cyberbullying are small or medium in size[2]. This is true of other complex societal problems. Factors can be important even if they are not strongly linked to cyberbullying.

Considerations for interpreting these findings

- As an emerging area of research with a rapidly growing evidence base, this report does not capture all possible risk or protective factors. The available evidence base is largest for individual level factors, and it appears that the most-studied risk factors are those that are easier to measure (e.g., age).
- More research on family, peer and school factors is needed to inform cyberbullying interventions. As children and adolescents tend to experience cyberbullying outside school hours, targeted research on modifiable family factors would help to identify more opportunities to prevent cyberbullying. Additionally, exploring community factors would also be beneficial, given they interact with other factors.
- Although individual, family, peer and school factors are presented separately, cyberbullying emerges from a complex interplay among these factors. Insights on how these factors interact will likely emerge with the rapidly growing literature on cyberbullying.
- Overall, across countries most factors are consistently associated with cyberbullying. However, more research is needed to understand risk and protective factors for cyberbullying in the Australian context. Most of the evidence comes from research conducted in North America and Europe, some from Asia and a handful from other regions including Australia. Context may partly account for mixed findings about factors such as age (see Appendix 1). For example, it is possible that cross-national differences in education transition points (e.g., primary to secondary in Australia; primary to middle to high school in the US) contribute to mixed findings about the link between age and cyberbullying. In Australia and elsewhere, an increase in cyber and face-to-face bullying behaviour occurs in the immediate transition period from primary school to secondary school, possibly because of social factors such as changes in friendships groups.
- Most of the research has been conducted with secondary school-aged adolescents. Less is known about risk and protective factors for primary school-aged children. Research with younger children could inform opportunities for early intervention.
- Some of the studies included in this review excluded specific populations, such as children with developmental diagnoses. The risk and protective factors may or may not be different for these groups of children; future research needs to address this important question.

[2] Using effect size criteria based on Rice and Harris (2005, cited in Walters, 2021).

Table 1. Factors associated with cyberbullying at the individual, family, peer and school levels.

Factor	Confidence level and strength of association between factor and cyberbullying role		References
	Cyberbullying others	Being cyberbullied	
INDIVIDUAL PROTECTIVE			
Social and emotional factors			
Higher self esteem	Level 2 *	Level 2 *	Agustiningsih et al. (2024); Chen et al. (2017); Fisher et al. (2016); Kowalski et al. (2014); Zhu et al. (2021)
Higher empathy	Level 2 *	Not a significant protective factor	Kowalski et al. (2014); Zych et al. (2019A)
More positive **other-related** cognition (positive attitudes about others, moral values and empathy)	Level 2 *	Not a significant protective factor	Guo (2016)
More positive **self-related** cognition (positive perceptions, awareness and attitudes about the self, including self-satisfaction)	Not a significant protective factor	Level 2 *	Guo (2016)
Better emotional management	Level 2 *	Level 2 *	Chen et al. (2017)
INDIVIDUAL RISK			
Other bullying involvement			
Being bullied face to face	Level 3 **	Level 3 **	Chen et al. (2017); Guo (2016); Kowalski et al. (2014); Li et al. (2022); Marciano et al. (2020); Walters (2021)
Being cyberbullied	Level 3 *		Kowalski et al. (2014); Marciano et al. (2020); Walters (2021)
Cyberbullying others		Level 3 **	Marciano et al. (2020); Walters (2021)
Bullying others face to face	Level 3 ***	Level 3 *	Farrington et al. (2023); Guo (2016); Kowalski et al. (2014); Marciano et al. (2020); Walters (2021)
Technology use			
Spending more time online • For bullying others, spending more time on mobile phones specifically is not a risk factor	Level 2 *	Level 2 N/A	Farrington et al. (2023); Henares-Montiel et al. (2022); Park et al.

Factor	Confidence level and strength of association between factor and cyberbullying role		References
			(2021); Zhu et al. (2021)
Using ICT (especially social media) more frequently	Level 3 *	Level 3 *	Chen et al. (2017); Guo (2016); Kowalski et al. (2014); Marciano et al. (2020)
Engaging in risky behaviour online (e.g., giving out personal information to strangers online, giving a password to a friend)	Level 2 *		Chen et al. (2017); Kowalski et al. (2014)
Having a personal computer or access to a computer in a private space (e.g., bedroom)	Level 2 N/A	Unknown (not enough data)	Farrington et al. (2023)
Playing violent video games rated high on maturity	Level 2 N/A		Farrington et al. (2023)
Perceptions about online environments and behaviour online			
Greater perceived anonymity of the self and/or others online	Level 3 N/A		Kim et al. (2023)
Believing that cyberbullying is an acceptable way to behave	Level 2 ***		Kowalski et al. (2014)
Social and emotional factors			
Using moral disengagement (i.e., cognitive processes that enable people to behave unethically without feeling distressed)	Level 2 **		Chen et al. (2017); Kowalski et al. (2014); Lo Cricchio et al. (2021)
More **externalising** problems (engaging in delinquent, defiant and rule-breaking acts)	Level 2 **	Level 2 *	Guo (2016)
More **internalising** problems (e.g. depression, anxiety, stress, loneliness)		Level 2 **	Guo (2016)
Depression		Level 3 *	Farrington et al. (2023); Marciano et al. (2020)
Higher on aggression (behaving aggressively and/or holding positive attitudes about aggression)	Level 2 *		Guo (2016); Kowalski et al. (2014); You and Lim (2016)
Lower on self-control (e.g., more likely to get angry, do dangerous things for fun)	Level 2 *		Henares-Montiel et al. (2022); Zhu et al. (2021)
Higher on antisocial personality traits (e.g., hostility, narcissism)	Level 2 *		Chen et al. (2017); Guo (2016)
Demographics and background factors			
Male • Risk factor for cyberbullying others in international, but not Australian, research (Jadambaa et al., 2019)	Level 2 *	Not a significant risk factor	Guo (2016); Jadambaa et al. (2019); Henares-Montiel et al. (2022); Park et al. (2021)
Female • Risk factor for being cyberbullied in	Not a significant risk factor	Level 2 *	Farrington et al. (2023); Guo (2016); Henares-

Factor	Confidence level and strength of association between factor and cyberbullying role		References
international, but not Australian, research (Jadambaa et al., 2019)			Montiel et al. (2022); Jadambaa et al. (2019); Lozano-Blasco et al. (2023B)
Neurodivergent and/or experiencing mental health difficulties[3]	Level 2 N/A	Level 2 N/A	Abregú-Crespo et al. (2024)
Trauma/abuse (emotional, physical, sexual)		Level 2 N/A	Farrington et al. (2023)
Discriminated on personal characteristics (height or weight, look or behaviour, opinions or beliefs)		Level 2 N/A	Henares-Montiel et al. (2022)
FAMILY PROTECTIVE			
More positive family environment (e.g., less family conflict, more family cohesion, more parental involvement, greater child-parent attachment)	Level 2 *	Level 2 *	Guo (2016)
More frequent interactions with parents • Stronger link in Western countries than Asian countries	Level 2 *	Level 2 *	Chen et al. (2017)
Greater parental warmth (support and responsiveness) • Social support from parents (but not peers) was associated with lower likelihood of cyberbullying others 1 year later	Level 3 *	Level 2 *	Elsaesser et al. (2017); Kowalski et al. (2014); Henares-Montiel et al. (2022)
Parents monitor child's online activities using **active mediation** (e.g., open discussion concerning the internet and joint creation of rules) • Active mediation is more effective than restrictive mediation (i.e., limiting and controlling child's online activities)		Level 2 N/A	Elsaesser et al. (2017)
FAMILY RISK			
Parenting that uses guilt and shame to pressure children to behave in certain ways • May include the use of insults in communications with child (Lozano-Blasco et al., 2024)	Level 2 N/A		Henares-Montiel et al. (2022)
Authoritarian parenting style (low warmth, high control)	Level 2 N/A	Not a significant risk factor	Elsaesser et al. (2017); Zhu et al. (2021)
PEER PROTECTIVE			
Positive peer influence (accepted by peers, included by peers, popular with peers)	Level 2 *	Level 2 *	Guo (2016)
PEER RISK			
Social norms	Level 2 **		Chen et al. (2017)
Fewer prosocial peer influences	Level 3 N/A		Farrington et al. (2023)

[3] Abregú-Crespo et al. (2024) examined cyberbullying involvement among children and adolescents diagnosed with "a neurodevelopmental and/or psychiatric condition" according to criteria from the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5).

Factor	Confidence level and strength of association between factor and cyberbullying role		References
SCHOOL PROTECTIVE			
Positive school climate (positive school commitment, having a sense of belonging at school, staff treat students with respect, fairness and kindness)	Level 2 *	Level 3 *	Chen et al. (2017); Farrington et al. (2023); Guo (2016); Kowalski et al. (2014)
School safety (feeling safe at school)	Level 2 *	Level 2 *	Kowalski et al. (2014);

Confidence level key: Level 2 - Medium, Level 3 - High confidence (no studies were Level 2 or 4).

- *Levels refer to estimated confidence in the evidence reviewed, based on the Australian Education Research Organisation's (AERO's) Standards of Evidence.*
- *Ratings reflect the highest level of evidence met by at least one research study reviewed.*
- *Confidence levels are only provided for factors that are statistically significantly associated with cyberbullying.*

*Strength key: * small, ** medium, *** large, N/A not available*

- *Strength refers to how much the factor is associated with cyberbullying.*
- *Strength estimates are based on effect sizes from meta-analyses of studies with the highest confidence level.*
- *Strength estimates are only available for factors that are statistically significantly associated with cyberbullying and have been meta-analysed in the literature reviewed.*

Example:

*The rating for the association between depression and being cyberbullied is 'Level 3 *'. This means:*

- *The evidence suggests that depression is a causal risk factor for being cyberbullied (i.e., Level 3 high confidence) and*
- *The size of this association is small.*

Notes:

- *Typically, strength sizes are smaller or evidence at a higher confidence level than evidence at a lower confidence level for methodological reasons.*
- *Some cells are grey because there are no findings to report from the literature reviewed. For example, while research on engaging in risky behaviour online as a risk factor for cyberbullying others was included in the review, we did not identify any research describing its possible association with being cyberbullied.*
- *See Appendix 2 for factors that are not associated with cyberbullying, have mixed findings, or for which the evidence base is too small to draw conclusions.*

Comparison with face-to-face bullying

Factors at the individual, family, peer and school levels are important across different types of bullying. A recent review (Zych et al., 2019B) found that many of the protective factors for cyberbullying are also protective factors for face-to-face bullying. However, overall school-level factors were more strongly related to face-to-face bullying than cyberbullying, and peer-level factors were more strongly related to cyberbullying than face-to-face bullying.

Although cyberbullying shares similarities with face-to-face bullying, an important difference is that it takes place online. The online environment creates unique features associated with cyberbullying. Box 3 provides a summary of key themes from interview (qualitative) research.

Box 3.

Features that make cyberbullying distinct from face-to-face bullying

- **Children and adolescents commonly experience cyberbullying at home.** In contrast, face-to-face bullying usually happens at school.
- **Cyberbullying can happen all the time, at any time.** The accessibility of ICT facilitates an ongoing cycle of bullying. Bullying that begins in cyberspace can continue at school and back to cyberspace.
- **There are few rules and authority figures in online spaces.** This may contribute to perceptions that cyberbullying is acceptable, and bystanders don't need to act. Some parents and carers perceive that the internet has normalised aggressive behaviours.
- **Cyberbullying is constantly evolving.** Forms of cyberbullying evolve alongside new platforms, apps and ways of communicating online. There is a generation gap in ICT use. Parents and carers report they struggle to maintain awareness of their children's online activities.
- **Even single acts of cyberbullying can have a big impact**. Privately shared information can be forwarded to many others. Information in the public domain can reach a large audience instantly. Some children and adolescents may not be aware of the lasting impact of their actions, while others may seek to amuse a large audience to gain social approval.
- **Power dynamics are different online.** ICT users can operate anonymously, reducing fear of retaliation. Children and adolescents who typically wouldn't bully others face-to-face may do so online. Children and adolescents who typically wouldn't be bullied face-to-face may become targets online.
- **Cyberbullying situations are often ambiguous.** Communicating online is typically more challenging than in real life. The person being cyberbullied may find it difficult to express their distress, leading others to misinterpret the incident as not harmful.

References: Dennehy et al. (2020); Jeyagobi et al. (2022); Pardo-Gonzales and Souza (2022); Pyzalski et al. (2022)

Negative bystander behaviours: risk factors

Bystanders (or witnesses) can play an influential role in cyberbullying. Their responses have the potential to disrupt, maintain or worsen cyberbullying incidents. Understanding the behaviour of bystanders can help policymakers identify possible intervention points for cyberbullying.

This section outlines risk factors for negative bystander behaviours, which are actions taken by bystanders of cyberbullying that either don't help or harm someone who is being cyberbullied (Jeyagobi et al., 2022). There are four types of negative bystander behaviours:

- **Passive response** refers to not intervening. Others may perceive these passive responses as silent approval of the cyberbullying.
- **Assisting** refers to joining in the cyberbullying.
- **Reinforcing** refers to showing support for the person who is cyberbullying. Examples include laughing along or sharing the incident with others to make fun of the person being cyberbullied.

- **Aggressively defending** refers to using aggression to defend the person being cyberbullied. This could involve threatening, saying mean things about or spreading rumours about the person who is cyberbullying.

Different types of negative bystander behaviours are linked to individual, family and peer factors. Additionally, bystander responses depend on specific aspects of the cyberbullying incident at play and how children and adolescents interpret the incident. Incident-specific and more general factors are presented separately, in Tables 2 and 3.

Findings about positive bystander behaviours are also incorporated, although there were fewer studies to draw on from the review. Positive bystander behaviours refer to constructive actions taken by witnesses of cyberbullying, including seeking to improve the situation for the person being cyberbullied. These include expressing support toward the person being cyberbullied and constructively defending the person being cyberbullied (e.g., showing disapproval of the cyberbullying without using aggression).

Aspects of the cyberbullying incident

- **Interpretation of the incident** – Bystanders are more likely to respond passively if they enjoy witnessing the incident, don't know how to interpret the cyberbullying incident, perceive the incident as less severe or think the person being cyberbullied can handle the situation. Bystanders are more likely to reinforce the cyberbullying if they think the incident is a joke between the parties involved.
- **Involvement of other cyber-bystanders** – Children and adolescents tend to follow the lead of other bystanders. They are more likely to respond passively if other bystanders are not responding and reinforce the cyberbullying if other bystanders (particularly those who are close friends) are doing so.
- **Relationship with the other people involved** – Children and adolescents appear to default to passive responses when they don't have a close relationship with anyone involved in the cyberbullying incident. When they don't know the person being cyberbullied, they may not feel responsible to intervene or they may perceive the cyberbullying as less severe. Children and adolescents are more likely to reinforce the cyberbullying when they are friends with the person who is cyberbullying, perhaps to preserve the friendship.
- **Other** – Delayed exposure to the incident and greater popularity of the person who is cyberbullying are associated with passive responses.

Individual level factors

- **Other bullying involvement** – Children and adolescents who bully others face-to-face or online are more likely to assist or respond passively as bystanders to cyberbullying. Being bullied online is associated with aggressive defending as a bystander.
- **Social and emotional factors** – Using moral disengagement (i.e., cognitive processes to behave unethically without feeling distressed) is associated with all types of negative bystander behaviours (responding passively, assisting, reinforcing and aggressively defending). Conversely, bystanders who report less moral disengagement are less likely to blame the target and deny their own responsibility, and more likely to defend the person being cyberbullied without using aggression. Low empathy is associated with passively responding and assisting, whereas high empathy is associated with defending the person being cyberbullied in a constructive way. Children and adolescents who are higher on aggression or who believe aggression is an acceptable way to respond to provocation, are more likely to negatively respond as bystanders by reinforcing or assisting. There are also associations between a lack of social-emotional skills and skills to intervene, and passive responding.

- **Demographics** – Boys are more likely than girls to respond passively, reinforce or assist. Older age is associated with responding passively and assisting, possibly due to being lower in empathy, higher in anti-social tendencies, or greater fear of social judgement by peers.

Family level factors

- **Parental monitoring of online activities** – Parental monitoring only using restrictive strategies (i.e., limiting and controlling children's online activities) is associated with greater risk of reinforcing cyberbullying as bystanders.
- **Disclosure of online cyberbullying experiences to parents** – Adolescent disclosure of cyberbullying experiences is associated with greater likelihood of constructively defending the person being cyberbullied.

Peer level factors

- **Fear of peer responses** – Fear of being cyberbullied is associated with passive bystanding.
- **Beliefs about peer expectations and responses** – Children and adolescents who think peers expect negative bystander behaviour or such behaviour will be rewarded (e.g., by a rise in social status), are more likely to assist or reinforce cyberbullying.
- **Class norms** – Children and adolescents who are in a class with a higher number of peers who bully face-to-face are more likely to assist cyberbullying.
- **Less positive peer interaction** – Children and adolescents who have less positive peer interaction in class are more likely to assist cyberbullying.

Considerations for interpreting these findings

- Almost all the reviewed factors are associated with bystander behaviour (Level 2 confidence), but not causally. Factors may be both a cause and effect of bystander behaviour.
- Factor strength estimates are not available because the factors were not meta-analysed in the research reviewed.
- The available evidence base on bystander behaviour is relatively small. No research on school-level factors was identified for the review. Negative bystander behaviour was the focus of most of the reviewed research, with most findings linking risk factors to responding passively. More research on positive bystander behaviour is needed to help identify how to support children to constructively intervene when they witness cyberbullying.
- Most of the evidence comes from research conducted in North America and Europe. It would be beneficial to understand bystander behaviour specifically in the Australian context.
- Most of the research was conducted with secondary school-aged children, with some studies examining young adults (mostly university students).

Table 2. Aspects of the cyberbullying incident associated with types of negative bystander behaviour

Aspect of the cyberbullying incident	Type of negative bystander behaviour
Interpretation of the incident	
Perceive the incident as less severe • Lack of physical aggression in the online environment makes the incident seem less serious	Passive response
Think that the person who is being cyberbullied can handle the situation themselves	Passive response
Unsure how to interpret the incident, including who is responsible for the incident	Passive response
Enjoy witnessing the incident	Passive response
Think the incident is a joke between the person who is cyberbullying and the person who is being cyberbullied	Reinforcing
Involvement of other bystanders	
There are many other bystanders	Passive response
Other bystanders are not responding	Passive response
Other bystanders are reinforcing the person who is cyberbullying • especially the case if they are close friends with those bystanders	Reinforcing
Relationship with other people involved	
Does not have a close relationship with anyone else involved in the incident	Passive response
Friends with the person who is cyberbullying and there are no other bystanders	Passive response, reinforcing
Has a bad relationship with or doesn't know the person being cyberbullied • may perceive themselves as less responsible to intervene compared to when they have a close relationship with the person being cyberbullied • may perceive the cyberbullying as less severe	Passive response
Other	
Delayed exposure to the incident (e.g., see it later online)	Passive response
The person who is cyberbullying is popular	Passive response

Reference: Jeyagobi et al. (2022)

Note:

Factor strength estimates are not available because none of the factors were meta-analysed in the research reviewed.

Table 3. Factors associated with bystander behaviour at the individual, family and peer levels

Factor	Type of negative bystander behaviour
INDIVIDUAL	
Other bullying involvement	
Bullying others online or face-to-face	Assisting, passively responding
Being bullied online	Aggressively defending
Social and emotional factors	
Using moral disengagement (i.e., cognitive processes that enable people to behave unethically without feeling distressed)	Passive response, assisting, reinforcing, aggressively defending
Low empathy • Bystanders who are **high** on empathy are more likely to constructively defend people being cyberbullied	Passive response, assisting
Lack (or believe they lack) the skills to intervene • Beliefs about lacking skills might be partly due to lack of control over cyberbullying incident (e.g., cannot control something from going viral)	Passive response
Lack the skills to defend the person being cyberbullied in a constructive way	Aggressively defending
Low socio-emotional skills (self-reliance and problem-solving skills)	Passively responding
High on aggression	Assisting
Believing that aggression is an acceptable way to respond to provocation	Reinforcing
Demographic and background factors	
Male • May perceive the cyberbullying as less severe • May be more likely to use moral disengagement	Passive response, assisting, reinforcing
Older age • May be lower in empathy • May have greater anti-social tendencies • May have greater fear of judgement by peers	Passive response, assisting
FAMILY LEVEL	
Parents monitor child's activities online using restrictive mediation (i.e., limiting and controlling child's online activities)	Reinforcing
PEER LEVEL	
Fear that they will be cyberbullied if they intervene	Passive response
Believe their peers will expect or reward negative bystander behaviour • Possible rewards include self-protection, rising in social status, gaining new friends	Assisting, reinforcing
Being in a class that has a higher number of students who bully others face-to-face	Assisting
Less positive peer interaction in class	Assisting

References: Evangelio et al. (2022); Jeyagobi et al. (2022); Lo Cricchio et al. (2021); Zych et al. (2019A)

Notes:

Factor strength estimates are not available because none of the factors were meta-analysed in the research reviewed.

Table presents findings on negative bystander behaviours. There were fewer studies about positive bystander behaviours (i.e., constructive actions taken by witnesses of cyberbullying, including seeking to improve the situation for the person being cyberbullied). Two findings about positive bystander responses emerged from the review:

- *Lower moral disengagement is associated with less victim blaming, less denial of own responsibility and greater constructive defending.*
- *Adolescent disclosure of cyberbullying experiences is associated with greater likelihood of constructive defending.*

Summary and implications

Understanding the factors associated with cyberbullying can help identify young people who are at risk of cyberbullying and negative bystander behaviour and inform strategies to prevent cyberbullying. Findings from this review suggest that cyberbullying interventions will be more effective if they take children's and adolescents' broader social environments into account.

Several key factors were found to be closely associated with the likelihood of being cyberbullied, cyberbullying others or engaging in both behaviours. Factors that are protective against involvement in cyberbullying include a safe school environment and positive school climate. Other valuable protective factors are social and emotional skills and capacities in social competency, emotional self-control, self-esteem, and empathy. Interventions that explicitly teach personal and social competencies, such as those featured in the NSW curriculum and Australian curriculum, are fruitful avenues for cyberbullying prevention. Supporting young people to accurately interpret cyberbullying situations and enhance their skills to constructively intervene as bystanders may also help to reduce cyberbullying. Being able to accurately identify behaviours as cyberbullying and knowing how to intervene effectively are key. Supporting the development of students' social and emotional skills is likely to have beneficial effects beyond cyberbullying prevention.

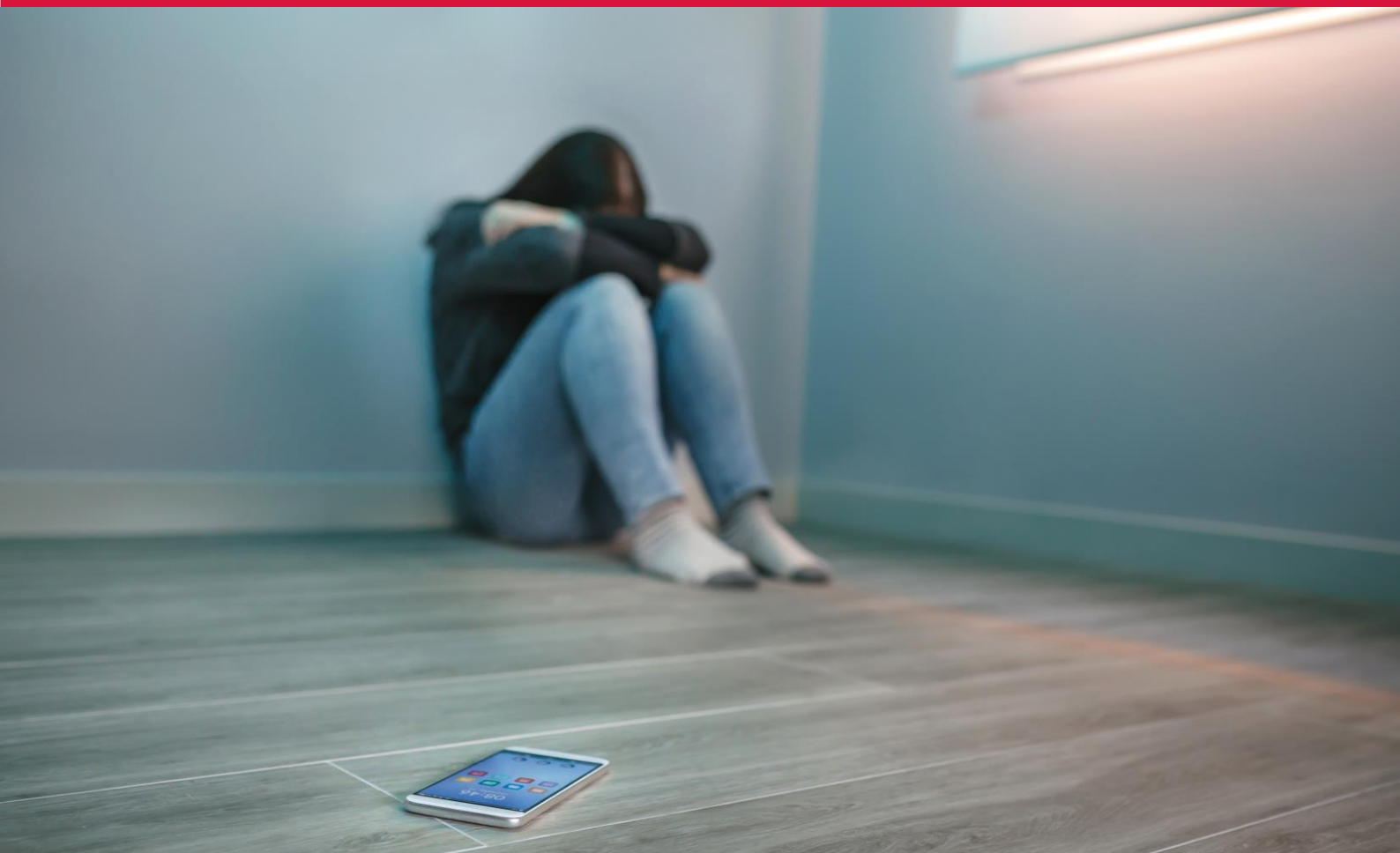
Other risk factors that may be modifiable include fewer prosocial peer influences, challenges in self-control and externalising problems. Additionally, spending more time online and using ICT more frequently are risk factors for both cyberbullying roles (cyberbullying others and being cyberbullied). Cyberbullying prevention interventions could support children and adolescents to balance their desire to maintain social connections online against technology use risk factors. Parents and carers could learn practical strategies to effectively monitor their children's online activities. Strategies are more likely to be effective if they are co-developed, warm and responsive, such as parents/carers having open discussions about online behaviour and setting rules in collaboration with their children. Given the generation gap in ICT usage, parents/carers could benefit from greater digital communication skills and knowledge about ICT platforms, so they can proactively discuss online behaviour expectations and know what to look for when monitoring their children's online behaviour.

Importantly, the most significant factors that predict cyberbullying are experiences of face-to-face bullying. Hence, one of the most effective ways to reduce cyberbullying is through whole-school interventions targeting all forms of bullying. A critical aspect of a comprehensive whole-school approach is providing targeted support to students who are at greater risk of involvement in face-to-face bullying and cyberbullying, including those who are neurodivergent and/or are experiencing mental health difficulties (Abregú-Crespo et al., 2024).

Overall, findings suggest that protecting children and adolescents from cyberbullying is more than just a schools'/education's responsibility. Strategies to address factors at different levels, involving multiple stakeholders (education system leaders, school leaders, parents/carers, community members, etc.) are needed.

5

Impacts of cyberbullying



Impacts of cyberbullying

Even with the best prevention efforts, children and adolescents will encounter cyberbullying. This chapter outlines the impacts of cyberbullying on children and adolescents, and factors that may increase or reduce cyberbullying impacts. Considering these factors can inform strategies to protect the wellbeing of children and adolescents involved in cyberbullying. Findings are presented in two sections:

1. Impacts of cyberbullying others and being cyberbullied on children and adolescents.
2. Risk and protective factors for cyberbullying impacts among cyberbullied children and adolescents.

Key findings

- **Cyberbullying has negative impacts on children's and adolescents' wellbeing.** Children and adolescents who cyberbully others or are cyberbullied are at greater risk of suicide, self-harm, depression, anxiety, lower self-esteem and drug and alcohol use. Being cyberbullied is also associated with social withdrawal.
- **Different cyberbullying roles appear to be associated with distinct emotional responses.** Typical responses to being cyberbullied include anger, embarrassment and sadness. Although cyberbullying others is associated with feelings of guilt, it may also elicit pride. One study found that children and adolescents who cyberbullied others viewed themselves as increasing in popularity over time.
- **Cyberbullied children and adolescents have poorer student outcomes.** Being cyberbullied is associated with truancy and poorer academic achievement.
- **Cyberbullying has negative impacts on perceptions about school and community.** Children and adolescents who cyberbully others or are cyberbullied report lower school belonging and trust in people from school and feeling less safe in their neighbourhood. Children and adolescents who are cyberbullied also report less trust in people from their neighbourhood and perceive more neighbourhood disorder.
- **Children and adolescents from a variety of backgrounds show negative impacts of being cyberbullied.** Research with diverse samples of children and adolescents (e.g., various ethnic backgrounds, nationalities, gender identities, and developmental challenges) have all documented negative consequences of being cyberbullied. It is unclear whether specific background characteristics are associated with greater cyberbullying impacts.
- **Aspects of the cyberbullying incident and poorer mental health may increase cyberbullying impacts**. Cyberbullied children and adolescents who are also bullied face-to-face, perceive the cyberbullying as more severe, are cyberbullied more frequently or because of background characteristics (e.g., their race/ethnicity, sexual orientation) appear to be at greater risk of suicide. Cyberbullied children and adolescents who have depression, psychological distress or engage in substance abuse also appear to be at greater risk of suicide.

- **Social and emotional skills can protect against cyberbullying impacts.** Among cyberbullied children and adolescents, those with higher forgiveness have a lower risk of poor mental health. Those with higher emotional intelligence, self-control and subjective well-being have lower suicide risk.
- **Parental warmth and monitoring can buffer cyberbullying impacts.** Greater parental support and a high warmth/high control parenting style can be protective against depression and suicidal ideation among cyberbullied children and adolescents. Collaborative strategies for monitoring children's online activities, such as co-viewing and discussing online content, has been associated with fewer psychosocial adjustment difficulties among cyberbullied adolescents with an intellectual disability and/or a developmental condition.
- **Satisfaction with different aspects of life is a protective factor.** Cyberbullied children and adolescents who report greater satisfaction with family life have less suicidal ideation than those who report less satisfaction. Satisfaction with classmates or academic achievement are also protective factors, but to a lesser degree than satisfaction with family life.
- **School climate is associated with cyberbullying impacts.** Greater sense of belonging at school, more positive relationships with peers and teachers, and having a connection with an adult at school are associated with lower risk of suicide among cyberbullied children and adolescents. A lower sense of belonging at school is a risk factor for loneliness and anxiety among cyberbullied children and adolescents.

Impacts of cyberbullying others and being cyberbullied

Key impacts of cyberbullying are outlined in Table 4 and summarised below. Most of the reviewed research on cyberbullying impacts focused on the role of students experiencing cyberbullying. Fewer findings are available about the impacts of cyberbullying others.

Being cyberbullied

- **Individual level** – Being cyberbullied is associated with greater risk of suicide, self-harm, and poorer physical and mental health. For example, children and adolescents who have been cyberbullied are at greater risk of later developing depression or anxiety. Being cyberbullied is associated with negative emotions such as anger, aggression, embarrassment and sadness. Cyberbullied children and adolescents have less positive self-views (e.g., lower self-esteem) and are lonelier than those who are not cyberbullied. Being cyberbullied is associated with poorer psychosocial adjustment, including social withdrawal, more externalising problems and drug and alcohol use.
- **Peer level** – Children and adolescents who are cyberbullied are more likely to go on to be bullied (face-to-face or online) and are more likely to bully others (face-to-face or online).
- **School level** – Being cyberbullied is associated with truancy and poorer academic performance. Cyberbullied children and adolescents report lower sense of belonging at school and less trust in people from school.
- **Community** – Cyberbullied children and adolescents report less trust in people from their neighbourhood, perceive more neighbourhood disorder and feel less safe in their neighbourhood.

Cyberbullying others

- **Individual level** – Cyberbullying others is associated with greater risk of suicide, self-harm, depression, anxiety, lower self-esteem, lower life satisfaction and drug and alcohol use. Cyberbullying others is associated with guilty feelings. However, many children and adolescents who cyberbully others do not feel guilty, and some feel proud.
- **Peer level** – Children and adolescents who have cyberbullied others are more likely to go on to cyberbully others, bully others face-to-face and be bullied (face-to-face or online). Children and adolescents who cyberbully others may perceive that their popularity increases over time, though their peers do not share this perception. This finding suggests that cyberbullying others leads to a perceived (but not actual) rise in social status.
- **School level** – Cyberbullying others is associated with lower sense of belonging at school and less trust in people from school.
- **Community** – Children and adolescent who cyberbully others report feeling less safe in their neighbourhood.

Considerations for interpreting these findings

- Although most of the evidence is from research conducted in North America, Europe and Asia, it is likely that many of the identified cyberbullying impacts also apply to children in Australia. Research suggests that cyberbullying is a life stressor which, like others, can have a variety of predictable negative effects cross-culturally (Barlett et al., 2021).
- Most of the reviewed research examined general populations, but there are similar findings from research focusing on specific populations. For example, being cyberbullied is associated with greater suicide risk among children and adolescents who are neurodivergent and/or experiencing mental health difficulties (Abregú-Crespo et al., 2024). It is not clear whether suicide risk associated with being cyberbullied is greater for children and adolescents from these subgroups compared to the general populations. How cyberbullying involvement affects children and adolescents across population groups is an important area for future research (Kwan et al., 2020; Martinez-Monteagudo et al., 2023).
- Findings about children and adolescents involved in both cyberbullying roles were not examined in the papers reviewed. However, other research indicates that these young people experience poorer outcomes than children who are only involved in one role (Lozano-Blasco et al., 2020). Also, we did not find any reviews describing the impact of cyberbullying on bystanders. However, findings that witnessing cyberbullying is associated with depressive symptoms and social anxiety (Doumas & Midgett, 2021) suggest that cyberbullying can have negative impacts even for young people not directly involved.
- Although they are presented as outcomes of cyberbullying, most of the reviewed variables have not been causally associated with cyberbullying. It is likely that some variables are both a cause and effect of cyberbullying. For example, evidence suggests that depression leads to greater risk of being cyberbullied (see Table 1) and being cyberbullied leads to higher levels of depression (see Table 4). In most instances, however, causality cannot be inferred from the associations.
- Research on family-level consequences of cyberbullying were not reviewed. Given that cyberbullying has a range of social and emotional impacts, it would be surprising if there are no consequences at the family level. It would be useful to understand such impacts (if any).
- This section provides an overview of the impacts of cyberbullying at different levels. That said, this research did not describe the broader impacts on peers, families, schools and communities. It is likely that cyberbullying behaviour among children and adolescents also has important outcomes that affect school staff, friends and family and possibly the community.

Table 4. Impacts of cyberbullying

Outcome	Confidence level and strength of association between role and outcome		References
	Cyberbullying others	Being cyberbullied	
INDIVIDUAL OUTCOMES			
Physical and mental health			
Suicide risk (suicidal ideation or attempts) or self-harm	Level 2 N/A	Level 2 N/A	Evangelio et al. (2022); Farrington et al. (2023); Li et al. (2022); Kowalski et al. (2014)
Poorer physical health (health complaints, perceived poor health, eating problems, sleeping problems, somatic symptoms)		Level 2 N/A	Farrington et al. (2023); Kowalski et al. (2014)
Depression and depressive symptoms	Level 3 *	Level 3 *	Evangelio et al. (2022); Farrington et al. (2023); Kowalski et al. (2014); Li et al. (2022); Marciano et al. (2020); Molero et al. (2022); Senekal et al. (2022)
Anxiety	Level 2 N/A	Level 3 *	Evangelio et al. (2022); Farrington et al. (2023); Kowalski et al. (2014); Marciano et al. (2020); Molero et al. (2022); Senekal et al. (2022)
Poorer mental well-being		Level 2 N/A	Evangelio et al. (2022);
Lower self esteem	Level 2 N/A	Level 2 N/A	Evangelio et al. (2022); Farrington et al. (2023); Kowalski et al. (2014)
Negative self-related cognition		Level 2 N/A	Evangelio et al. (2022)
Lower life satisfaction	Level 2 N/A	Level 2 N/A	Farrington et al. (2023); Kowalski et al. (2014)

Outcome	Confidence level and strength of association between role and outcome		References
Loneliness		Level 2 N/A	Evangelio et al. (2022); Kowalski et al. (2014)
Emotional responses			
Anger and aggression		Level 2 N/A	Evangelio et al. (2022); Farrington et al. (2023)
Embarrassment		Level 2 N/A	Farrington et al. (2023)
Sad and hurt		Level 2 N/A	Evangelio et al. (2022); Farrington et al. (2023)
Blaming the self and others		Level 2 N/A	Evangelio et al. (2022);
Guilt • Though many children who cyberbully others do not feel guilty	Level 2 N/A		Farrington et al. (2023)
Feeling proud and funny	Level 2 N/A		Farrington et al. (2023)
Psychosocial adjustment			
Social withdrawal		Level 2 N/A	Evangelio et al. (2022)
More externalising problems (engaging in delinquent, defiant and rule-breaking acts)		Level 2 N/A	Farrington et al. (2023)
More conduct problems		Level 2 N/A	Kowalski et al. (2014)
Drug or alcohol use (including binge drinking)	Level 3 *	Level 2 N/A	Evangelio et al. (2022); Farrington et al. (2023); Kowalski et al. (2014); Marciano et al. (2020); Molero et al. (2022)
PEER OUTCOMES			
Greater perceived popularity over time • However, ratings of popularity by others did not increase over time	Level 3 N/A		Evangelio et al. (2022); Farrington et al. (2023)
More likely to be bullied face-to-face (at a later point in time)	Level 3 *	Level 3 *	Marciano et al. (2020); Walters (2021)
More likely to be cyberbullied (at a later point in time)	Level 3 *	Level 3 ***	Marciano et al. (2020); Walters (2021)
More likely to cyberbully others (at a later point in time)	Level 3 ***	Level 3 *	Marciano et al. (2020); Walters (2021)

Outcome	Confidence level and strength of association between role and outcome		References
More likely to bully others face-to-face (at a later point in time)	Level 3 **	Level 3 *	Marciano et al. (2020); Walters (2021)
SCHOOL OUTCOMES			
Truancy		Level 2 N/A	Farrington et al. (2023)
Lower sense of belonging in school	Level 2 N/A	Level 2 N/A	Farrington et al. (2023)
Lower trust in people from school		Level 2 N/A	Farrington et al. (2023)
Poorer academic performance		Level 2 N/A	Farrington et al. (2023)
COMMUNITY OUTCOMES			
Lower perceived trust in people from neighbourhood		Level 2 N/A	Farrington et al. (2023)
Perceived disorder in neighbourhood		Level 2 N/A	Farrington et al. (2023)
Lower feelings of safety	Level 2 N/A	Level 2 N/A	Farrington et al. (2023)

Key:

Confidence level: Level 2 - Medium, Level 3 - High confidence (no studies were Level 2 or 4).

- *Levels refer to estimated confidence in the evidence reviewed, based on the Australian Education Research Organisation's (AERO's) Standards of Evidence.*
- *Ratings reflect the highest level of evidence met by at least one research study reviewed.*
- *Confidence levels are only provided for outcomes that are statistically significantly associated with cyberbullying roles.*

*Strength key: * small, ** medium, *** large, N/A not available*

- *Strength refers to how much the outcome is associated with cyberbullying.*
- *Strength estimates are based on effect sizes from meta-analyses of studies with the highest confidence level.*
- *Strength estimates are only available for outcomes that are statistically significantly associated with cyberbullying and have been meta-analysed in the literature reviewed.*

Example:

*The rating for the association between being cyberbullied and anxiety is 'Level 3 *'. This means:*

- *The evidence suggests that being cyberbullied is causally associated with anxiety (i.e., Level 3 high confidence) and*
- *The size of this association is small.*

Notes:

- *Typically, strength sizes ae smaller or Level 3 evidence than for Level 2 evidence for methodological reasons.*
- *Some cells are grey because there are no findings to report from the literature reviewed.*

Risk and protective factors for cyberbullying impacts among cyberbullied children

All the reviewed research examined factors that may exacerbate or mitigate cyberbullying consequences for the role of being cyberbullied. Most studies focused on the most serious potential responses to being cyberbullied – suicidal ideation and behaviours and self-harm behaviours. A few studies examined other psychosocial outcomes, such as psychological distress. Key findings are presented in Figure 2 (see Executive Summary) and Table 5.

Individual level factors

- **Aspects of the cyberbullying and other bullying involvement** – Cyberbullied children and adolescents who are also bullied face-to-face are at greater risk of suicide than those who are cyberbullied only. Children and adolescents who are cyberbullied based on their background characteristics (e.g., race/ethnicity, sexual orientation), perceive the cyberbullying as more severe, or those cyberbullied more frequently are at greater risk of suicide.
- **Social and emotional factors** – Higher forgiveness is a protective factor for mental health problems among children and adolescents who are cyberbullied. Among cyberbullied children and adolescents, those who have higher emotional intelligence, self-control or subjective wellbeing have lower suicide risk. Indicators of poorer mental health, including depression, anxiety, negative emotions and psychological distress are suicide risk factors among cyberbullied children and adolescents. Violent behaviours and substance abuse are linked to more suicide attempts among cyberbullied children and adolescents.
- **Demographics and background factors** – Having a healthy diet is protective against suicidal ideation among cyberbullied children and adolescents, whereas asthma is a risk factor. Previous suicidal and self-harm behaviours are linked to more self-harm behaviours among cyberbullied children and adolescents. Research investigating demographics including gender did not find consistent results (see Appendix 2).

Family level factors

- **Parental warmth, support and interactions** – A high warmth/high control parenting style is protective against suicidal ideation among cyberbullied children and adolescents. Cyberbullied children and adolescents who have more support from their parents are less likely to have depression and be at risk of suicidal ideation and behaviours. Having more dinners with family is associated with fewer internalising problems among cyberbullied children and adolescents. For cyberbullied boys, positive parent-child interactions protect against psychological distress.
- **Parental monitoring of online activities** – Collaborative strategies, such as co-viewing online content has been associated with fewer psychosocial adjustment difficulties among cyberbullied adolescents with an intellectual disability and/or a developmental condition.
- **Satisfaction with family life** – Cyberbullied children and adolescents who report greater satisfaction with family life have less suicidal ideation than cyberbullied children and adolescents who report less satisfaction. Greater satisfaction with family life is a stronger protective factor than satisfaction with classmates and academic achievement.

Peer level factors

- **High peer attachment** – High peer attachment is associated with lower risk of self-harm among cyberbullied adolescents. Having high peer attachment means having a close bond between one or a few peers that satisfy a child's or adolescent's needs for emotional support (Lin et al, 2023).

- **Satisfaction with classmates** – Greater satisfaction with classmates is associated with less suicidal ideation among cyberbullied young people, but this is a weaker protective factor compared to satisfaction with family life.

School level factors

- **School climate** – Among cyberbullied children and adolescents, whose who report greater belonging at school or more positive relationships with peers and teachers are at lower risk of suicide and self-harm. Having a connection with an adult at school was associated with fewer suicide attempts among cyberbullied LGBTQIA+ high school students. Greater satisfaction with academic achievements is associated with less suicidal ideation among cyberbullied children and adolescents (though to a lesser extent than satisfaction with family life). A lower sense of belonging at school is a risk factor for loneliness and anxiety among cyberbullied children and adolescents.

Considerations for interpreting these findings

- There is overlap in the risk and protective factors for cyberbullying (as per the previous chapter) and the factors associated with the impact of cyberbullying (this chapter). These factors include self-control, parental warmth and positive school climate. It would be important to address these factors to both prevent cyberbullying and to mitigate negative impacts for those children and adolescents involved in cyberbullying.
- The findings are based on studies conducted in different contexts (North America, Europe, Asia) and with different populations. Findings are likely to have applicability to the Australian context. The risk and protective factors reviewed here are similar for other life stressors.
- Understanding how to best support children and adolescents involved in cyberbullying would be enhanced by research investigating risk and protective factors for a broader range of outcomes and for different cyberbullying roles. No findings were identified for children and adolescents who cyberbully others (although research on this behaviour is growing at an exponential rate; Bansal et al., 2023) or bystanders.
- Factor strength estimates are not available because the factors were not meta-analysed in the research reviewed.

Table 5. Risk and protective factors for selected cyberbullying impacts among cyberbullied children and adolescents.

Factor	Outcomes	References
INDIVIDUAL PROTECTIVE		
Social and emotional factors		
Higher emotional intelligence	Suicide risk	Dorol-Beauroy-Eustache and Mishara (2021)
Higher self-control (less impulsivity and risk taking)	Suicidal ideation, self-harm	Dorol-Beauroy-Eustache and Mishara (2021)
Greater subjective wellbeing	Suicidal ideation	Dorol-Beauroy-Eustache and Mishara (2021)
Higher forgiveness	Mental health problems	Evangelio et al. (2022)
Background factors		
Having a healthy diet	Suicidal ideation	Buelga et al. (2022)

Factor	Outcomes	References
INDIVIDUAL RISK		
Aspects of the cyberbullying and other bullying involvement		
Perceive the cyberbullying as more severe	Suicidal ideation and suicide attempts	Dorol-Beauroy-Eustache and Mishara (2021)
Being cyberbullied more frequently	Suicidal ideation, suicide attempts and self-harm	Dorol-Beauroy-Eustache and Mishara (2021)
Also bullied face to face	Suicidal planning, suicide attempts	Buelga et al. (2022; Li et al. (2022) Includes data from high school students in Australia
Cyberbullied because of background characteristics (race/ethnicity, gender identity, sexual orientation)	Suicidal ideation and suicide attempts	Dorol-Beauroy-Eustache and Mishara (2021)
Social and emotional factors		
Depression	Suicidal ideation, suicide attempts and self-harm	Buelga et al. (2022); Dorol-Beauroy-Eustache and Mishara (2021); Predescu et al. (2024)
Negative emotions	Suicidal ideation	Dorol-Beauroy-Eustache and Mishara (2021); Predescu et al. (2024)
Loneliness	Suicidal ideation	Buelga et al. (2022); Dorol-Beauroy-Eustache and Mishara (2021)
Psychological distress	Suicidal ideation	Dorol-Beauroy-Eustache and Mishara (2021)
Perceived stress	Suicide risk, suicidal ideation, self-harm	Dorol-Beauroy-Eustache and Mishara (2021);Predescu et al. (2024);
Substance abuse	Suicide attempts	Dorol-Beauroy-Eustache and Mishara (2021)
Violent behaviours	Suicide attempts	Dorol-Beauroy-Eustache and Mishara (2021)
Previous suicidal and self-harm behaviours	Self-harm behaviours	Dorol-Beauroy-Eustache and Mishara (2021)
Demographics and background factors		
Having asthma	Suicidal ideation, planning and attempts	Dorol-Beauroy-Eustache and Mishara (2021)
FAMILY PROTECTIVE		
Authoritative parenting (high warmth/high control)	Suicidal ideation	Dorol-Beauroy-Eustache and Mishara (2021)

Factor	Outcomes	References
Positive parent-child relationships (among cyberbullied boys)	Psychological distress	Buelga et al. (2022)
Greater parental support	Depression, suicidal ideation and behaviours	Buelga et al. (2022); Dorol-Beauroy-Eustache and Mishara (2021); Evangelio et al. (2022)
Co-viewing and discussing online content with parents (among adolescents with an intellectual disability and/or a developmental condition)	Psychosocial adjustment difficulties	Evangelio et al. (2022)
Having more dinners with family	Internalising problems (including suicidal ideation and suicide attempts)	Dorol-Beauroy-Eustache and Mishara
Greater satisfaction with family life	Suicidal ideation	Dorol-Beauroy-Eustache and Mishara
PEER PROTECTIVE		
Positive peer relationships	Self-harm	Predescu et al. (2024)
Greater satisfaction with classmates	Suicidal ideation	Dorol-Beauroy-Eustache and Mishara
SCHOOL PROTECTIVE		
School connectedness (sense of belonging, relationship with peers and teachers)	Suicidal behaviour, self-harm	Dorol-Beauroy-Eustache and Mishara; Predescu et al. (2024)
Positive perceived school climate (among Asian American boys)	Suicidal ideation and behaviours	Dorol-Beauroy-Eustache and Mishara
Having a connection with an adult at school (among LGBTIQ+ high school students)	Suicide attempts	Dorol-Beauroy-Eustache and Mishara
Greater satisfaction with academic achievement	Suicidal ideation	Dorol-Beauroy-Eustache and Mishara
SCHOOL RISK		
Lower school belongingness	Loneliness and anxiety	Evangelio et al. (2022)

Summary and implications

Findings show that cyberbullying others and being cyberbullied are associated with similar and poor outcomes, which include a wide range of psychological, emotional, behavioural, and social problems.

The main outcomes of cyberbullying include internalising (e.g., anxiety and depression) and externalising problems (e.g., behavioural challenges and substance abuse) and can affect learning outcomes (e.g., through absenteeism and disconnection from school). This means cyberbullying can have long-term effects on wellbeing and educational achievement (e.g., Molero et al., 2022). Conversely, reducing the prevalence and impact of cyberbullying through policies, procedures and practice can promote a greater sense of school belonging, feelings of safety at school and a greater sense of community safety.

Given most cyberbullying experiences are not reported to adults, with only 22% telling a parent and 16% telling nobody (not even a friend; Popovac, 2017), the harm from these behaviours can continue for extended periods of time and possibly worsen without support. Barriers to children and adolescents reporting cyberbullying need to be addressed (see Box 4 for a summary of findings from interview studies).

Adults have a significant role to play to protect the wellbeing of children and adolescents involved in cyberbullying. There is a need for schools to build a climate where students feel safe to report cyberbullying situations and have trust they will be resolved (Villarejo-Carballido et al., 2019). Schools can also amplify the protective factors that reduce the impact of being cyberbullied, such as fostering positive relationships between students and teachers to ensure students are supported at school. For parents, identifying if their child is involved in cyberbullying is challenging because it can be difficult for them to know what their child is experiencing. Parents can be alert to any signs of behaviour change in their child, show support and be mindful of not "oversizing" cyberbullying incidents in front of their child, and enquire into events at the school (Alcalá et al., 2019, p. 2435).

Box 4.

Barriers to children and adolescents reporting cyberbullying

- **Perceptions about cyberbullying.** Children and adolescents may think cyberbullying is a normal part of life. Bystanders may misinterpret the cyberbullying as not harmful.
- **Anonymity.** It can be difficult to prove the identity of the person who is cyberbullying.
- **Safety fears.** Children and adolescents fear that cyberbullying will escalate to face-to-face bullying.
- **Fear of adult overreaction.** Children and adolescents fear adults will restrict their internet access, going against their desire to be constantly connected.
- **Prior negative experiences with reporting to adults**. Adults' responses can be inconsistent. Sometimes children and adolescents get what they consider to be appropriate support from adults. Other times they don't get any help.
- **Perceptions about adults' competence**. Children and adolescents may think that adults are clueless about what happens online and don't know how to deal with cyberbullying. They prefer to address cyberbullying on their own or tell their peers.

References: Dennehy et al. (2020); Pardo-Gonzales and Souza (2022); Pyzalski et al. (2022)

6

Preventing cyberbullying: Effective cyberbullying prevention and harm reduction practice

Preventing cyberbullying: Effective cyberbullying prevention and harm reduction practice

This chapter outlines the features of effective cyberbullying prevention and harm reduction practice. It outlines the evaluated effectiveness of school-based prevention programming for cyberbullying and the content, delivery and implementation of these programs.

Key findings

- **School-based cyberbullying prevention programs are effective.** Research indicates that school-based anti-cyberbullying programs are effective in reducing prevalence of both cyberbullying others and being cyberbullied in school-aged children and adolescents. It is estimated that one case of cyberbullying is prevented for every 167 students exposed to cyberbullying interventions programs (Fraguas et al., 2021). Programs specifically designed for cyberbullying are more effective in reducing cyberbullying than general violence or face-to-face bullying prevention programs (Polanin et al., 2022). Some programs also have positive impacts on outcomes associated with cyberbullying, such as reducing face-to-face bullying and peer aggression and improving wellbeing and positive school climate.

Content of effective programs

- **Social-emotional learning (SEL) is crucial for cyberbullying prevention.** Programs that include at least some SEL components are the most successful in reducing cyberbullying. SEL equips students with skills in self-awareness and self-management (e.g., emotional regulation), social awareness and social management (e.g., empathy and positive communication), which all contribute to more responsible online interactions.
- **Multifaceted, comprehensive content is needed to foster a safe and respectful online environment for students.** Effective cyberbullying prevention programs go beyond just addressing cyberbullying; they incorporate a multifaceted approach addressing various health risk issues (both online and offline) related to cyberbullying. For optimal effectiveness, programs need to incorporate a combination of four key elements: social-emotional learning, cyberbullying education, positive bystander education and digital citizenship education.

Implementation features of effective programs

- **Whole-school approaches.** Whole-school approaches that involve the entire school community are particularly successful in reducing cyberbullying behaviours in students.
- **Teacher and parent involvement:** Most of the effective cyberbullying interventions reviewed are delivered by teachers. Interventions that involve both teachers and parents (Wang & Jiang, 2022) are more effective in reducing cyberbullying behaviour.
- **Tailored:** Tailoring programs to local contexts, considering student needs and perspectives may be particularly beneficial.
- **Engaging learning formats:** Effective cyberbullying programs use learning formats that are accessible and maximise student engagement with program content. Research shows that digital health interventions (e.g., serious games, online forums) reduce the prevalence of cyberbullying others and being cyberbullied (with small to medium effect sizes; Chen et al., 2023). Peer interaction and group work involving peer leaders (Lan et al., 2022) show promise, although more evidence is required for definitive conclusions.
- **More than one-off sessions:** Programs that are ongoing are more effective than programs offered as one-off sessions.

Evidence base for the findings in this chapter

For the scope of this review, almost all cyberbullying prevention programs are school based. Most of the reviewed evidence comprised evidence syntheses and primary evaluation studies (see Appendix 3 for details about the evidence syntheses and Table 6 for details about the primary evaluation studies). Qualitative studies examining content and features of interventions were included to provide deeper contextual insights.

- The evidence syntheses were meta-analyses and systematic reviews of the effectiveness of cyberbullying programs and their various elements. There were 10 meta-analyses reviewing a total of 281 studies published between 1995 and 2022.
- The primary evaluation studies, published between 2019 and 2024, evaluated the effectiveness of 27 individual cyberbullying prevention programs on cyberbullying behaviour (cyberbullying others and/or being cyberbullied). Across these studies, researchers evaluated the impact of 27 different interventions on over 31,562 children and/or adolescents. The evaluation methods included rigorous randomised controlled trials (RCTs; 17 studies) and quasi-experimental studies (10 studies) for a comprehensive analysis. The reviewed interventions originated from various countries, with Spain (11 studies), Italy (3 studies), and the USA (5 studies) being the most represented.

Cyberbullying prevention programs significantly reduce cyberbullying behaviours

The reviewed research suggests that school-based prevention programs focused on cyberbullying are effective in reducing prevalence of cyberbullying behaviours.

Findings from the reviewed meta-analyses include:

- Universal school-based anti-cyberbullying interventions have a substantial population impact, with one case of cyberbullying prevented for 167 students exposed to a cyberbullying intervention (based on a conservative estimate of cyberbullying prevalence: 15% pooled prevalence of students who cyberbully others and students who are cyberbullied; Fraguas et al., 2021). This intervention success rate is much better than drug-based interventions like aspirin to prevent death (35,562 people) or human papillomavirus vaccines to prevent cancer in girls (324 girls).
- An analysis comparing cyberbullying behaviours before and after the implementation of cyberbullying prevention programs found significant reductions in the prevalence of cyberbullying. Specifically, prevalence of students cyberbullying others reduced by approximately 9-15% and prevalence of students being cyberbullied reduced by approximately 14-15% (Gaffney et al., 2019).
- School-based anti-cyberbullying interventions targeting children and adolescents who cyberbully others had a favourable effect on preventing cyberbullying (Mula-Falcón & González, 2022).
- The prevalence of cyberbullying behaviours (both cyberbullying others and being cyberbullied) in adolescents reduced following implementation of school-based educational programs. However, these positive effects did not persist in the long term (Ng et al., 2022).
- School-based violence prevention programs, consisting of programs targeting general violence and programs targeting face-to-face bullying and cyberbullying, were associated with significant reductions in children and adolescents cyberbullying others and those being cyberbullied (Polanin, 2022). However, programs that focused specifically on cyberbullying had higher average intervention effectiveness for cyberbullying behaviours relative to programs with a focus on general violence prevention. Similarly, a meta-analysis of cyberbullying-focused

prevention interventions revealed significant reductions in both students who cyberbullied others and students who were cyberbullied (Doty et al., 2022).

Findings from the reviewed primary evaluation studies include:

- Of the 20 interventions focused on reducing the incidence of students who are cyberbullied, 14 showed success.
- Of the 21 interventions focused on reducing the incidence of students who cyberbully others, 15 demonstrated effectiveness.

Overall, the research overwhelmingly supports the effectiveness of school-based anti-cyberbullying programs in reducing cyberbullying behaviours in students. These programs can significantly decrease cyberbullying behaviours (both the behaviour of cyberbullying others and the experience of being cyberbullied). However, the long-term impact of these programs is still being explored.

Cyberbullying prevention programs have positive impacts on face-to-face bullying and other outcomes associated with cyberbullying

Alongside the prevention of cyberbullying, many of the evaluation studies examined outcomes related to other online behaviours, health and wellbeing, relationships at school and student outcomes. These studies suggest that cyberbullying prevention programs can have positive impacts on outcomes at the individual student, family, peer and school levels.

A common finding is that cyberbullying prevention programs reduce the prevalence of face-to-face bullying in addition to cyberbullying (e.g., Benítez-Sillero et al., 2021; Ferrer-Cascales et al. 2019). Moreover, programs targeting face-to-face bullying, alone or in addition to cyberbullying, are often effective in improving both face-to-face bullying and cyberbullying outcomes (Tozzo et al., 2022). This suggests cyberbullying and face-to-face bullying are interconnected behaviours, and that interventions addressing either one can have positive spillover effects on the other. It also highlights the potential for comprehensive bullying prevention programs that tackle both online and offline forms of aggression to create a safer and more supportive school environment.

Examples of other outcomes positively impacted by cyberbullying prevention programs include:

- **Individual level:** risky online behaviours (e.g., problematic internet use, internet gaming disorder, online grooming and sexting, cyberbullying awareness, attitudes and responses, bystander responses, health and wellbeing (e.g., lower e-cigarette use, lower somatic complaints), emotional self-awareness, problem-solving capabilities and coping with cyberbullying incidents
- **Family level:** parental involvement in children's online activities
- **Peer level**: lower student aggression, more prosocial peer behaviour
- **School level**: positive school climate, greater school safety, lower truancy, involvement in school disciplinary procedures, awareness of school ICT policies, teacher involvement

It is important to note that studies did not always find positive impacts on all examined outcomes. For example, interventions in the reviewed studies found no significant effect on online dating violence (Ortega-Baron, Gonzalez-Cabrera et al. 2021), self-esteem (Aizenkot & Kashy-Rosenbaum, 2020) or students' perceptions of their popularity (Aizenkot & Kashy-Rosenbaum, 2020). Moreover, in some studies, outcomes associated with cyberbullying improved, but not cyberbullying itself. For example, a study evaluating the effectiveness of implementing a nationwide intervention to support schools in developing e-safety policies raised students' awareness of ICT risks but did not significantly lower rates of cyberbullying involvement in young people (Fiorentini et al., 2022).

See ‘Other outcomes associated with cyberbullying’ section (end of this chapter) for further details.

Considerations for interpreting these findings

These findings should be considered in relation to the confidence in the evidence, size of effects and the contexts in which the studies were conducted.

Confidence in the evidence and size of effects

The estimated confidence level for most of the studies informing this review was high (Level 3) or very high (Level 4). Most used robust research designs (randomised controlled trials or quasi-experiments with control groups) to test the causal impact of the interventions:

- Nine out of the 10 meta-analyses restricted their study samples to studies with high (Level 3) or very high (Level 4) confidence levels.
- Of the primary evaluation studies, 81% (22 out of 27) were at high (Level 3) or very high (Level 4) confidence level. It should be noted that 15% (4 out of 27) interventions were described as pilot trials and some studies had relatively small sample sizes.

The interventions aimed at reducing cyberbullying behaviours yielded effect sizes that are predominantly within the small to medium range (Panjeh, Nordahl, & Cogo-Moreira, 2023). This translates to a modest, but significant, reduction in the prevalence of children and young people involved in cyberbullying across the wider population. While these interventions are demonstrating modest positive impacts, the effect sizes suggest that the magnitude of change does not eliminate cyberbullying. However, it is important to recognise that even small to medium effect sizes can yield substantial benefits for the wider population. For instance, a small reduction in cyberbullying rates could still mean substantially fewer children and adolescents experiencing harm from cyberbullying when interventions are implemented at scale.

Specific contexts

In their meta-analysis, Kamaruddin and colleagues (2023) examined the effectiveness of anti-cyberbullying interventions within the Asia-Pacific region (which includes Australia; Cross et al., 2016). Only four studies met the criteria of the review (Cross et al., 2016, Leung et al., 2019; Liau et al., 2017; Tapingkae et al., 2020) and one of these looked at college-aged students. Results from this meta-analysis found no significant differences between the interventions and control conditions for both the behaviour of those cyberbullying others and those experiencing cyberbullying. However, the non-significant differences were favouring the intervention group in both cases. This finding suggests further research is needed in both Australian and Asian contexts specifically. As noted, much of the research informing this review was conducted Spain and the USA.

In another meta-analysis (Polanin et al., 2022), intervention effects were larger for being cyberbullied when a larger proportion of males were in the sample and for samples of higher socioeconomic status. More research is needed to understand the effectiveness of cyberbullying prevention programs across populations.

The rest of this chapter describes the content and implementation features associated with effective interventions.

Content of effective interventions

Effective cyberbullying programs are comprehensive in their approach, acknowledging the multifaceted nature of online challenges faced by students today and complementary knowledge and skills needed to address these issues (see Table 6 for an overview of content delivered to

students). While cyberbullying itself remains the primary focus of most interventions (59% of the reviewed primary evaluation studies), the remaining portion (41%) tackle a broader spectrum of online safety issues and risk behaviours. This includes cyber-abuse, online grooming, substance use, face-to-face bullying, mental health concerns, and various other online and social challenges.

The most effective cyberbullying prevention programs incorporate a combination of four key elements:

1. Social-emotional learning to equip students with the necessary skills,
2. explicit cyberbullying education to raise awareness,
3. positive bystander education to empower intervention, and
4. digital citizenship education and digital literacy to promote responsible online behaviour.

Other programmatic content examined in the reviewed studies included education to encourage help-seeking behaviours in incidents involving cyberbullying.

Social-emotional learning

Social-emotional learning (SEL) programs can help students develop emotional regulation, build empathy and social awareness, and foster positive communication skills – all crucial aspects of responsible online behaviour. Primary evaluation studies of cyberbullying prevention programs highlight the critical role of including social-emotional learning (SEL) in the interventions. A large proportion, 85% (23 out of 27) of the reviewed programs incorporated SEL, and these interventions were the most successful in achieving reductions in both cyberbullying others (71% of the programs incorporating SEL; 12 out of 17 studies) and being cyberbullied (81% of the programs incorporating SEL; 13 out of 16 studies). This suggests that equipping students with social-emotional skills plays a vital role in fostering positive online interactions.

Cyberbullying education and awareness

Cyberbullying education directly addresses the issue, raising awareness of its consequences and equipping students to identify and avoid cyberbullying situations. The majority (67%; 18 out of 27) of the reviewed primary intervention programs included cyberbullying education and awareness in their programming content. Of the programs that included cyberbullying education and awareness content, 72% (13 out of 18) were successful in reducing the incidence of those cyberbullying others, whilst 44% (8 out of 18) were successful in reducing the frequency of those being cyberbullied. For example, the Cyberbullying Education and Awareness (CBAE; Uludaşdemir & Küçük, 2024) intervention was an online, self-led intervention delivered to school-aged children and adolescents and their parents. The intervention was successful in reducing the incidence of those who cyberbullied others but not those being cyberbullied. Overall, these findings suggest that including cyberbullying awareness raising and education in cyberbullying interventions may be effective for reducing cyberbullying.

Positive bystander education

Positive bystander education empowers students to intervene effectively when they witness cyberbullying, potentially disrupting the cycle and promoting a culture of inclusiveness and responsibility. Relatively fewer evaluated interventions (37%; 10 out of 27) featured positive bystander education in their programming content. However, 60% of those interventions (6 out of 10) were successful in reducing the incidence of those being cyberbullied and 40% (4 out of 10) were successful in reducing the incidence of those who cyberbully others.

Research on what constitutes the most effective content for cyberbullying bystander education is in its relative infancy. A useful approach appears to be focussing bystander education efforts on empathy development while also fostering a positive school climate that emphasises supportive relationships and strong friendships within the school (Macaulay et al., 2024). Additionally, students can learn specific positive bystander strategies (see Box 5 for examples of positive bystander strategies for adolescents that are research-informed).

Box 5.

Four strategies to promote positive bystander responses during social media interactions

Teachers, parents and peers can support adolescents to develop positive bystander skills. Qualitative research has proposed four specific strategies adolescents can use to promote positive bystander responses during social media interactions:

- **'Make the invisible visible':** explicitly challenge microaggressive communication (such as hate speech) in a non-threatening manner by undermining or challenging the language (e.g., request that the person who is making microaggressive commentary to clarify their comments).
- **'Disarm the microaggression':** explicitly communicate disagreement with the posting of harmful or offensive online content to dissuade future actions.
- **'Educate the perpetrator':** develop strategies such as using facts or influential online content to combat misinformation or harmful content.
- **'Seek external reinforcement or support':** actively use online functions such as content blocking or flagging.

Reference: Awad and Connors (2023)

Digital citizenship education

Digital citizenship education teaches students how to navigate the online world safely and responsibly, fostering positive online behaviour and reducing the risk of cyberbullying involvement. Just under half of the reviewed interventions (44%, 12 out of 27), featured education on digital citizenship in their programming content. Of those reviewed studies, 50% (6 out of 12) were successful in reducing the incidence of cyberbullying behaviours (both cyberbullying others and experiencing cyberbullying). Among the primary evaluation studies, interventions that included other ICT-related risks alongside relational issues demonstrated similar effectiveness to interventions that focused solely on cyberbullying. This finding suggests that addressing broader online safety and social behaviour issues can contribute positively to reducing cyberbullying incidents. It highlights the interconnectedness of online and offline behaviour, where a focus on creating a positive social environment can have a ripple effect on online interactions.

Conclusion: Content of effective interventions

For optimal effectiveness, cyberbullying prevention programs should likely incorporate a combination of these key elements: social-emotional learning to equip students with the necessary skills, cyberbullying education to raise awareness, positive bystander education to empower intervention, and digital citizenship education to promote responsible online behaviour. Supporting this review of primary intervention studies, a qualitative review (Hajnal, 2021) examining the effectiveness of specific design features of 23 cyberbullying interventions highlights that programs

with a strong social-emotional learning component, alongside education about online safety and cyberbullying awareness raising are effective in preventing school-aged young people's involvement in cyberbullying. Moreover, specific design elements should be considered in relation to the social dynamics of cyberbullying. For instance, social-emotional learning and empathy training are crucial for addressing the behaviour of those who cyberbully others, while digital citizenship and positive bystander education are more effective for those being cyberbullied. Interventions addressing multiple digital safety risks (e.g., exploitation, exposure to explicit content, privacy breaches) may be more beneficial and cost-effective than focusing solely on cyberbullying (Doty et al., 2022). This multifaceted approach provides a strong foundation for fostering a safe and respectful online environment for students.

Table 6. Intervention content

Intervention Name	Social Emotional Learning	Cyberbullying Education	Digital Citizenship Education	Positive Bystander Education	Help or Support Seeking Strategies	Cyberbullying Outcomes	
						Being Cyberbullied	Cyberbullying Others
Safe Surfing	Yes	Yes	Yes	Yes	Yes	Significant positive improvement	Not measured
ThinkUKnow	No	Yes	Yes	Yes	Yes	Not measured	No significant positive improvement
PRE-BULLPE	Yes	Yes	No	Yes	No	Significant positive improvement	Significant positive improvement
Learning Together	Yes	No	No	No	No	Significant positive improvement*	Significant positive improvement*
Digital Citizenship Curriculum	Yes	No	Yes	No	No	No significant positive improvement	No significant positive improvement
Self-Affirmation/Incremental Theory of Personality Intervention	Yes	Yes	No	No	No	Not measured	Significant positive improvement
Self-Affirmation/Incremental Theory of Personality Intervention	Yes	Yes	No	No	No	Not measured	Significant positive improvement
Resilience Incremental Theory of Personality Intervention	Yes	Yes	No	No	No	Not measured	No significant positive improvement

Intervention Name	Social Emotional Learning	Cyberbullying Education	Digital Citizenship Education	Positive Bystander Education	Help or Support Seeking Strategies	Cyberbullying Outcomes	
						Being Cyberbullied	Cyberbullying Others
Incremental Theory of Personality Intervention	Yes	Yes	No	No	No	No significant positive improvement	Significant positive improvement
Asegúrate	Yes	Yes	Yes	No	No	Significant positive improvement**	Significant positive improvement**
Singularities	Yes	No	No	No	Yes	Significant positive improvement	Not measured
Musical Intervention	Yes	No	No	No	No	Significant positive improvement**	Significant positive improvement**
Tutoria Entre Iguales (TEI) Peer Tutoring Program	Yes	No	Yes	No	No	Significant positive improvement*	Significant positive improvement*
Safer Internet Centre	No	No	Yes	No	No	No significant positive improvement	No significant positive improvement
Relaziono Per Crescere (RPC) - Relationships to Grow	Yes	Yes	Yes	No	No	No significant positive improvement	No significant positive improvement
Stand Up: Virtual Reality to Activate Bystanders Against Cyberbullying	No	Yes	No	Yes	No	Not measured	Significant positive improvement
IMPACT (Intervention Media to Prevent Adolescent Cyber-	Yes	No	No	Yes	No	No significant positive improvement	Not measured

Intervention Name	Social Emotional Learning	Cyberbullying Education	Digital Citizenship Education	Positive Bystander Education	Help or Support Seeking Strategies	Cyberbullying Outcomes	
						Being Cyberbullied	Cyberbullying Others
Conflict Through Technology)							
Prev@cib	No	Yes	Yes	Yes	No	Significant positive improvement**	Significant positive improvement**
Prev@cib 2.0	Yes	Yes	Yes	Yes	No	Significant positive improvement**	Significant positive improvement**
Safety.Net	Yes	No	Yes	No	No	Significant positive improvement***	Not measured
NoTrap! Program	Yes	Yes	No	Yes	No	Significant positive improvement	Not measured
N/A	Yes	Yes	No	No	No	Significant positive improvement	No significant positive improvement
Motivational Interviewing Intervention	Yes	Yes	No	No	No	Not measured	Significant positive improvement
KiVa	Yes	Yes	No	Yes	No	Significant positive improvement*	Not measured
Cyberbullying Education and Awareness (CBAE)	Yes	Yes	Yes	No	No	No significant positive improvement	Significant positive improvement***
Dating Matters	Yes	No	No	No	No	Significant positive improvement	Significant positive improvement

Intervention Name	Social Emotional Learning	Cyberbullying Education	Digital Citizenship Education	Positive Bystander Education	Help or Support Seeking Strategies	Cyberbullying Outcomes	
						Being Cyberbullied	Cyberbullying Others
Media Heroes	No	Yes	Yes	Yes	Yes	Not measured	Significant positive improvement***

Key:

- **Social Emotional Learning:** The key ideas for Social-Emotional Learning as defined by the Australian Curriculum, Assessment, and Reporting Authority (ACARA) in terms of Personal and Social Capability (PSC). These domains can be split into four areas of self-management, self-awareness, social management, and social awareness.
- **Cyberbullying Education:** Increasing awareness and knowledge of cyberbullying (e.g., prevalence, consequences, identifying incidents) and teaching associated concepts (e.g., cyberbullying roles)
- **Digital Citizenship Education:** Digital citizenship training involves behaviours where individuals are taught how to better engage socially in online environments (e.g., online microaggression, impact of online mediated communication) as well as engage with features of the online environment (e.g., engaging with digital protection features, online ICT risks)
- **Positive bystander Education:** Modalities of education that focus on teaching bystander concepts or activate positive bystander behaviour through group learning scenarios.
- **Help or Support Seeking Strategies**: Modalities of teaching that have involves developing specific skills in seeking out help from adults, resources or services

Notes: *denotes small effect size, ** denotes medium effect size, *** denotes large effect size; No asterisk denotes significant group differences using non-standardised effect size measures; For Asegúrate, the average prevalence of those being cyberbullied remained higher than control despite significant reductions. This may be attributed to the convenience sampling of the schools participating in the intervention. For KiVa, improvement reflects only the male sample, and only significant reductions in prevalence of frequent experiences of being cyberbullied.

Implementation features of effective interventions

Cyberbullying prevention programs have been implemented in a variety of ways. This section describes the implementation features most often associated with effective cyberbullying prevention programs, based on findings from the evidence syntheses and primary evaluation studies (see Table 7 for features of the evaluated interventions). Although evidence about implementation is in its infancy, useful insights have emerged to inform considerations about how to best implement cyberbullying programs. Many of the specific implementation features of these interventions have not been examined separately, and as such the following characteristics of implementation are considered as part of a broader suite of delivery strategies. A key consideration for implementation (discussed below) highlights the need to incorporate processes to understand the context of implementation, such as including student perspectives and voices in the design and delivery of interventions.

Whole-school approaches

Whole-school approaches, as defined by the World Health Organization's (WHO) Health Promoting Schools (HPS) framework, comprise three key characteristics: 1) the promotion of a key health education topic (e.g., cyberbullying) through the formal school curriculum; 2) the health and wellbeing of students promoted through embedding informal or key activities in the school social and physical setting; and 3) the engagement of families, outside agencies and the wider community (Langford et al., 2015).

This review identified three (out of 27; 11%) evaluation studies that featured a whole-school approach to preventing student involvement in cyberbullying (see Table 8 for an overview of how features of these interventions align with the WHO HPS framework). All three studies successfully reduced cyberbullying behaviours (both cyberbullying others and being cyberbullied). The whole-school collaborative approach may foster a more comprehensive and supportive environment leading to greater reductions in cyberbullying incidents. By working together, schools in partnership with parents can create a safer and more positive online environment for all students.

Cyberbullying prevention research and practice would benefit from greater clarity and consistency regarding whole-school approaches. Definitions of whole-school approaches are highly variable, ranging from a focus on the basic implementation of policies to specific involvement of the whole educational community in the intervention. For example, a meta-analysis examined whole-school approaches through a narrow lens of parental inclusion and teacher training (Hajnal, 2021), and found no evidence to suggest that such approaches were more successful in reducing cyberbullying behaviours than other approaches. There is a policy opportunity to provide explicit guidelines, aligned with the definition of evidence-based frameworks such as the WHO HPS framework, for whole-school approaches to cyberbullying prevention. This includes a consideration of the three key elements of integrated into formal curriculum, practiced in school organisational settings, and engaged with wider school community. Moreover, this highlights the importance of future research to consider explicit and guided reporting of whole-school approaches aligned with the WHO HPS framework.

Table 7. Implementation and delivery strategies of evaluated interventions

Intervention Name	Approach to Cyberbullying	Focused only on Cyberbullying or other Risk Behaviours?	Other Areas of Risk?	Delivery Format	Whole-School Approach	Peer Educator Model	Level of Parent Involvement	Intervention Length	Cyberbullying Outcomes	
									Being Cyberbullied	Cyberbullying Others
Safe Surfing	Universal	Only cyberbullying		Teacher trained to implement lessons	Yes	No	Workshop and lectures for involvement and monitoring online activity	Multi-session	Significant positive improvement	Not measured
ThinkUKnow	Universal	Cyberbullying and other risks	Cyber-abuse	Police-led	No	No	None	One-off	Not measured	No significant positive improvement
PRE-BULLPE	Universal	Only cyberbullying		Teacher trained to implement lessons	No	No	None	Multi-session	Significant positive improvement	Significant positive improvement
Learning Together	Universal	Only cyberbullying		Teacher trained to implement lessons	No	No	None	Multi-session	Significant positive improvement*	Significant positive improvement*
Digital Citizenship Curriculum	Universal	Only cyberbullying		Researcher-led	No	No	None	Multi-session	No significant positive improvement	No significant positive improvement
Self-Affirmation/ Incremental Theory of Personality Intervention	Universal	Cyberbullying and other risks	Online grooming	Researcher-led	No	No	None	One-off	Not measured	Significant positive improvement
Self-Affirmation/ Incremental Theory of Personality Intervention	Universal	Cyberbullying and other risks	Online grooming	Researcher-led	No	No	None	One-off	Not measured	Significant positive improvement
Resilience Incremental Theory of Personality Intervention	Universal	Cyberbullying and other risks	Online grooming	Online, researcher-led	No	No	None	One-off	Not measured	No significant positive improvement

Intervention Name	Approach to Cyberbullying	Focused only on Cyberbullying or other Risk Behaviours?	Other Areas of Risk?	Delivery Format	Whole-School Approach	Peer Educator Model	Level of Parent Involvement	Intervention Length	Cyberbullying Outcomes	
									Being Cyberbullied	Cyberbullying Others
Incremental Theory of Personality Intervention	Universal	Cyberbullying and other risks	Online grooming	Researcher-led	No	No	None	One-off	No significant positive improvement	Significant positive improvement
Asegúrate	Universal	Only cyberbullying		Teacher trained to implement lessons	No	No	None	Multi-session	Significant positive improvement**	Significant positive improvement**
Singularities	Selective	Cyberbullying and other risks	Substance use, victimisation, mental health issues	Online, self-led	No	No	None	Multi-session	Significant positive improvement	Not measured
Musical Intervention	Universal	Only cyberbullying		Teacher-led in education centre	No	No	None	NA	Significant positive improvement**	Significant positive improvement**
Tutoria Entre Iguales (TEI) Peer Tutoring Program	Universal	Only cyberbullying		Teacher trained to implement lessons	Yes	Yes	Training for cyberbullying detection	Multi-session	Significant positive improvement*	Significant positive improvement*
Safer Internet Centre	Universal; Selective	Cyberbullying and other risks	ICT risks	Policy development	No	No	Website for resources and 2h meeting for ICT risk awareness	NA	No significant positive improvement	No significant positive improvement
Relaziono Per Crescere (RPC) - Relationships to Grow	Universal	Only cyberbullying		Teacher trained to implement lessons	No	No	None	Multi-session	No significant positive improvement	No significant positive improvement
Stand Up: Virtual Reality to Activate Bystanders Against Cyberbullying	Universal	Cyberbullying and other risks	F2F bullying, relational aggression	Health practitioner-led	No	No	None	Multi-session	Not measured	Significant positive improvement

Intervention Name	Approach to Cyberbullying	Focused only on Cyberbullying or other Risk Behaviours?	Other Areas of Risk?	Delivery Format	Whole-School Approach	Peer Educator Model	Level of Parent Involvement	Intervention Length	Cyberbullying Outcomes	
									Being Cyberbullied	Cyberbullying Others
IMPACT (Intervention Media to Prevent Adolescent Cyber-Conflict Through Technology)	Universal	Only cyberbullying		Health practitioner-led, online	No	No	None	One-off	No significant positive improvement	Not measured
Prev@cib	Universal	Only cyberbullying		Teacher trained to implement lessons	No	No	None	NA	Significant positive improvement**	Significant positive improvement**
Prev@cib 2.0	Universal	Only cyberbullying		Teacher trained to implement lessons	No	No	None	NA	Significant positive improvement**	Significant positive improvement**
Safety.Net	Universal	Cyberbullying and other risks	Online risk behaviour (e.g., sexting, online grooming, cyber dating abuse, problematic internet use)	Teacher trained to implement lessons	No	No	None	NA	Significant positive improvement ***	Not measured
NoTrap! Program	Universal	Only cyberbullying		Health practitioner-led	No	Yes	None	NA	Significant positive improvement	Not measured
NA	Universal	Only cyberbullying		Health practitioner-led	No	No	None	Multi-session	Significant positive improvement	No significant positive improvement
Motivational Interviewing Intervention	Indicated	Cyberbullying and other risks	F2F bullying	Researcher-led	No	No	None	Multi-session	Not measured	Significant positive improvement

Intervention Name	Approach to Cyberbullying	Focused only on Cyberbullying or other Risk Behaviours?	Other Areas of Risk?	Delivery Format	Whole-School Approach	Peer Educator Model	Level of Parent Involvement	Intervention Length	Cyberbullying Outcomes	
									Being Cyberbullied	Cyberbullying Others
KiVa	Universal; Indicated	Only cyberbullying		Teacher trained to implement lessons	No	No	Receive material detailing information about bullying and advice for action	NA	Significant positive improvement*	Not measured
Cyberbullying Education and Awareness (CBAE)	Universal	Only cyberbullying		Online, self-led	No	No	Cyberbullying education and digital citizenship parental communication skills	Multi-session	No significant positive improvement	Significant positive improvement***
Dating Matters	Universal	Cyberbullying and other risks	Relational issues	Teacher trained to implement lessons	Yes	No	Training for parents	Multi-session	Significant positive improvement	Significant positive improvement
Media Heroes	Universal	Only cyberbullying		Teacher trained to implement lessons	No	No	Student presentation about ICT risks to parents	Multi-session	Not measured	Significant positive improvement***

Notes: *denotes small effect size, ** denotes medium effect size, *** denotes large effect size; No asterisk denotes significant group differences using non-standardised effect size measures; F2F bullying = Face-to-Face Bullying; Musical Intervention was carried out by music teachers in an education centre. The intervention was focused on process for promoting group cohesion (conducting a musical orchestra) rather than an intervention specifically training teachers to implement.

Table 8. Evaluated interventions aligning with the World Health Organization's Health Promoting Schools framework

Intervention Name	Formal Curriculum: Teaching and Learning	School Ethos: Organisation and Environment	Partnerships and Participation: School-Home-Community	Cyberbullying Outcomes	
				Being Cyberbullied	Cyberbullying Others
Safe Surfing	The intervention forms part of the school's broader 'Life Skills' curriculum. This curriculum incorporates multi-sessional programming with SEL forming a core component.	Broader involvement of other school professional staff (i.e., school counsellors) in the delivery of the intervention.	Parents are invited to participate in lectures and workshops around cyberbullying, the provision of tools for parental involvement and for monitoring online activity.	Significant positive improvement	Not measured
Tutoria Entre Iguales (TEI) Peer Tutoring Program	Peer tutors are trained in various elements of SEL programming and are also trained to deliver this to their peers as well.	Involvement of students delivering the intervention and/or coordinating its delivery by helping teachers. Special diploma presented to all participants at end of program (students, peers tutors, teachers, family volunteers).	Encourages students' families to participate in helping implement the intervention. Family volunteers are trained in cyberbullying detection and action.	Significant positive improvement*	Significant positive improvement*
Dating Matters	Curriculum materials comprise a comprehensive SEL-based, relationships-focused curriculum.	Inclusion of a youth communications activity program, involving youth peer ambassadorship to support other peers and reinforce curriculum learning.	Parents receive education around positive communication and building healthy relationships; resources for data collection on relational issues with local health departments.	Significant positive improvement	Significant positive improvement

Key:

- **Formal Curriculum: Teaching and Learning:** Forms part of a broader curriculum, programming is sequential and integrated (not one-off, incorporates SEL)
- **School Ethos: Organisation and Environment:** Broader context of school organisational involvement, involving other staff.
- **Partnerships and Participation: School-Home-Community:** Linking between home and school environments and/or community (including parents into programming).

Notes: *denotes small effect size; No asterisk, but with green colour denotes significant group effects but non-standardised effect size

Teaching staff involvement

Teacher involvement is a crucial factor in program effectiveness. Most of the reviewed interventions (56%; 15 out of 27) were implemented in classrooms, led by teachers. Interventions where teachers received training to lead lesson implementation tended to demonstrate greater success (48%; 13 out of 27). In almost all cases, such programs included structured materials to support teachers to deliver the cyberbullying program. This underscores the vital role educators play in delivering these programs and fostering positive online behaviour among students.

A meta-analysis (Lan et al., 2022) identified a clear link between the success of cyberbullying prevention programs and student and teacher engagement. Programs that incorporated peer tutoring, group discussions, and collaborative activities where students could learn and apply anti-cyberbullying knowledge were more effective than those focused solely on information delivery. Furthermore, collaboration between teachers and program designers to tailor activities to student needs seemed to enhance program effectiveness. Other research (Lim et al., 2022) suggests that involving tech-savvy content experts in program implementation could be effective. Such experts may be well-equipped to deliver technical content to students because children and adolescents are ‘digital natives’ who have grown up in the internet age. Overall, findings highlight the importance of student and teacher interaction, along with program adaptation based on student knowledge, as key factors for successful cyberbullying prevention programs.

Parent/carer involvement

Evidence syntheses suggest that parental involvement (e.g., parent education; Hutson et al., 2021) education) is an important component of cyberbullying programs. A meta-analysis (Wang & Jiang, 2022) found that interventions with parental involvement were significantly more effective in reducing the frequency of cyberbullying others and being cyberbullied. However, these reductions were sustained in the long term only for being cyberbullied, not for cyberbullying others. A qualitative case study of a whole-school, cooperative learning initiative (Alcalá et al., 2019) that engaged parents, peers, and teachers in group learning was found to promote tolerance and empathy in the students involved. Following introduction of the initiative, students also had greater intrinsic motivation, social skills and group cohort cohesion and these positive outcomes were maintained over time.

Findings from the primary evaluation studies suggest that parental involvement yields better results when more comprehensive methods are used. For example, training parents for cyberbullying detection and student presentations to parents and workshops for parents appear to be more effective than simply providing parents with limited resources and brief meetings.

Engaging learning formats

Ensuring that cyberbullying programs are engaging and accessible is an important consideration for implementation. Three approaches to enhancing engagement are described below.

Digital health interventions

Although most cyberbullying programs have employed non-digital formats (Lim et al., 2022), digital health programs are an important focus, especially considering their potential to reach large audiences. Examples of digital health intervention formats include serious video games, webpage information and mobile applications. A meta-analysis (Chen et al., 2023) revealed that cyberbullying prevention interventions delivered in digital health format reduced the incidence of cyberbullying others and being cyberbullied, with a medium effect size. Digital health interventions

had small to medium effect sizes for other positive outcomes, including greater empathy and self-esteem, less positive attitudes toward bullying, reduced intention to cyberbully others, and greater coping, knowledge and awareness of bullying. Moreover, the type of online digital health format had medium effect sizes in the form of interactive serious games and online forums. Effective serious games for cyberbullying tend to focus on teaching strategies for detecting and dealing with cyberbullying and/or increasing awareness about the impact of (cyber)bullying behaviours (Calvo-Morata et al., 2020).

Of the reviewed programs from the primary evaluation studies, 11% (3 out of 27) were delivered using online platforms. In one of these studies (Kutok et al., 2021), an app-based intervention was found to be an acceptable and feasible platform to reach adolescents who were at high risk of being cyberbullied.

Peer led interventions

Involving peers leading peers in the program delivery is a promising way to enhance engagement. Two primary evaluation studies showcase the success of peer-led programs in addressing bullying and cyberbullying. One of these programs (Ferrer-Cascales et al., 2019) significantly reduced bullying and cyberbullying behaviours while improving school climate. This suggests that peer-led interventions can create a positive school environment where students feel empowered to address and prevent bullying. Another program (Palladino et al., 2019) effectively reduced internalising symptoms in students who had been cyberbullied, indicating that peer-led interventions can also have a positive impact on the mental health of those affected by cyberbullying. Peer-led interventions involve the active engagement and participation of students in the development and delivery of the intervention. This student-centred approach not only enhances the relevance and effectiveness of the interventions, but also empowers students to become active agents of change in creating safer online environments.

Dramatic arts

One study (Lyngstad et al., 2021) included in this review qualitatively examined the implementation of a drama process workshop in a cyberbullying prevention program. The workshop was used to incorporate the perspective of students into their learning and facilitate greater engagement with cyberbullying prevention. Students were also better able to develop empathy through the perspective taking and role-playing they undertook as a part of the class. This finding emphasises the benefits of leveraging learning formats that incorporate student perspectives and maximise student engagement with program content.

Age-appropriate interventions

Research suggests that interventions are more likely to be effective if their content and delivery are tailored to be developmentally appropriate. For example, a qualitative review (Torgal, 2023) found that while cyberbullying prevention programs can effectively promote positive bystander intervention, they must incorporate developmentally appropriate content that enhances students' self-efficacy to intervene. As social skills and perspective-taking abilities develop with age, tailoring positive bystander education content to specific age groups is essential. Another example is the gap in interventions and measurement tools, specifically for primary school-aged students. Two systematic reviews (Evangelio et al., 2022; Chicote-Beato et al., 2024) highlight that many studies include participants from mixed age groups, making it difficult to assess the effectiveness of interventions specifically for younger children. These reviews emphasise early intervention, ideally before children have their own devices, and call for more qualitative research to understand the

unique experiences and perspectives of elementary and middle school students regarding cyberbullying.

Tailoring student perspective and voice

It is critical to centre the perspectives and voices of students in the design, delivery and implementation of cyberbullying programs. Lyngstad (2022) highlighted that incorporating student voice in cyberbullying prevention is essential for several reasons. Firstly, it ensures the relevance of interventions, as students are more likely to engage with and learn from programs that resonate with their own experiences and concerns. Secondly, it empowers students by giving them a voice and agency in addressing the issue, fostering a sense of ownership and encouraging them to become active agents of change. Lastly, incorporating student voice provides invaluable contextual understanding, offering insights into the specific dynamics of cyberbullying within their school environment. Incorporating such knowledge is crucial for tailoring interventions that effectively address the unique challenges and needs of the student population.

Multi-tier systems of support

School-based cyberbullying interventions require comprehensive approaches to support all students. However, cyberbullying prevention programs overwhelmingly lean towards Tier 1 (universal) approaches, designed to reach all students. Of the 27 programs evaluated in the primary intervention studies, 93% were delivered to the general student population. Tailoring interventions to the relative level of risk experienced by the student is a crucial consideration. Early intervention practices (Tier 2/selective) for students at higher risk of cyberbullying and intensive support practices (Tier 3/indicated) for students experiencing cyberbullying difficulties or engaging in cyberbullying are needed alongside Tier 1 interventions. More research is needed to understand the effectiveness of cyberbullying interventions in meeting the needs and strengths of specific subgroups of children and adolescents (Hensums et al., 2023).

Local contexts

A qualitative study (Ranjith et al., 2024) conducted in Bengaluru, India, illustrates considerations for understanding the local context for effective cyberbullying harm reduction. Themes from interviews conducted with mental health professionals and cyber experts align with many of the findings from this evidence review. For example, participants identified similar risk factors for cyberbullying involvement (e.g., anonymity in online environments) and similar negative impacts (e.g., depression and lower academic performance) in their local context. They also emphasised the need for child-centric, whole-school approaches and intervention content that focuses on personal skill development, cyberbullying education and digital citizenship. In considering the local context, the authors noted ‘in the Indian context, there is no privacy between children and parents’ (page 7) and as such, there may be greater opportunities compared to other contexts for parents to supervise their children’s online activities as a strategy for preventing cyberbullying. Moreover, participants in the study highlighted that access to child mental health services can be inconsistent in India, and it may be particularly important to train school counsellors and teachers in India to support students who have been cyberbullied to reduce further harms. These findings underscore the importance of considering cultural norms in local contexts in developing cyberbullying interventions (Esposito et al., 2023).

Number of sessions

Program duration, which is highly variable among cyberbullying interventions, is another key consideration for implementation. For the purposes of this review, program duration was parsed into either a one-off session or a multi-sessional approach to program delivery. Just over half of the interventions (52%; 14 out of 27) were delivered across multiple sessions, while 22% (6 out of 27) were delivered in a single session. Of the multi-sessional intervention approaches, 57% (8 out of 14) were successful in reducing the prevalence of students who were cyberbullied, and 64% (9 out of 14) were successful in reducing the prevalence of students who cyberbullied others. In contrast, no intervention delivered as a one-off session was successful in reducing the incidence of cyberbullied students, and 50% (3 out of 6) were found to be successful in reducing the incidence of students cyberbullying others. This finding may highlight the need for multi-sessional approaches to intervention delivery.

It is unclear how many contact hours constitute the ideal return on investment. A systematic review (Doty et al., 2022) of cyberbullying prevention studies published prior to 2019 found that programs including family components and had least one hour of contact successfully reduced cyberbullying and maintained effects over time. Moreover, there was no significant difference in the effectiveness of programs with more than eight contact hours compared to programs with one to eight contact hours.

Overall, research suggests that cyberbullying interventions need to extend beyond one-time information sessions. Additionally, programs should be monitored to understand if they are of a sufficient duration to sustain outcomes.

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In addition to the above insights, important learnings about implementation features emerge from understanding the perspectives of various stakeholders. Key insights from interview studies with students and teachers are described in Boxes 6 and 7.

Box 6.

Student perspectives on cyberbullying interventions: Key themes from interview research

Cyberbullying interventions need to:

- **Target what students need and want to know.** Students need to see the relevance of cyberbullying prevention to their lives. Children and adolescents report a need for practical strategies about how to maintain privacy, particularly with popular and newer apps (which change over time).
- **Use engaging content and formats.** Games and quizzes, tailored content (e.g., adapted to students' knowledge) and app-based delivery are examples of program elements that may be more acceptable to students.
- **Respect student autonomy.** Many students say they prefer to address cyberbullying on their own. This underscores the need to equip students with digital technology skills, so they're not reliant on others to ensure their online safety.
- **Provide timely support.** Alternatively, students who do want support would like to access guidance when they need it most (e.g., at the time of a cyberbullying incident).

Cyberbullying interventions should avoid:

- **Fear-based tactics.** Cyberbullying interventions that present students as inherently untrustworthy and rely on fear-based tactics are less successful.
- **Gendered messaging.** Female students receive more messages about being careful online than male students do. This may put the onus on girls to prevent cyberbullying.
- **Content that is not age appropriate.** Content that is pitched at the wrong level can come across as 'cringey'.
- **Being motivated by legal and reputational concerns.** Programs that appear to be driven by schools' legal responsibility are not perceived as having students' best interests at heart.

References: Adorjan and Ricciardelli (2019); Dennehy, Cronin and Arensman (2018); Gabrielli et al. (2021); Milosevic et al (2023); Pennell et al. (202); Ranney et al. (2021)

Box 7.

Teacher perspectives on cyberbullying interventions: Key themes from interview research

Important features of effective approaches to addressing cyberbullying include:

- **Proactive approach.** Aspects include establishing clear expectations of behaviour, a positive school climate and expecting and maintaining high standards of digital citizenship.
- **School-home partnerships.** Family involvement is considered an important aspect of effectively addressing cyberbullying. Technology can be leveraged to encourage family engagement, for example via webinars.
- **Sustainable.** Ongoing reflection and professional learning are needed for sustained action. Peer training, communities of practice and champions can all facilitate embedding practices. Identifying specific training needs is important. Some teachers expressed a need for technical skills training such as mental health support for students who have been involved in cyberbullying.
- **Routine and ongoing.** Cyberbullying education needs to be ongoing, and issues need to be revisited regularly with students. Online harms can go undetected if staff assume that online safety issues only need to be dealt with during earlier stages of schooling.
- **Restorative justice approaches.** Mediation circles may enable students who cyberbully others to see the harm they caused to the other person. Additionally, no-blame approaches could be considered given that some cyberbullying can be unintentional.

Identified barriers to implementing cyberbullying interventions include:

- **Impractical policies dispersed across a range of documents.** To drive school action, policies need to be practical and involve teachers and students in their development.
- **Unreasonable expectations.** Schools can be faced with unreasonable expectations about what they can do about cyberbullying. The way cyberbullying is reported in the media may contribute to these expectations. Alternatively, such reports may highlight the seriousness of cyberbullying and potentially encourage school staff to intervene in cyberbullying incidents.
- **Translating recommendations to practice.** Teachers may rely on 'workarounds' rather than translating recommendations from cyberbullying prevention frameworks. Such frameworks may not be well aligned to day-to-day teaching practice. More clarity is needed.
- **Lack of time.** Intervening in cyberbullying can be time-intensive and emotionally fraught. It can be challenging to find the time to have meaningful conversations about online safety in class.

References: Adorjan et al. (2023); Hendry et al. (2023); Pennell et al. (2020); Pyzalski et al. (2022); Said-Hung et al. (2021); Thompson (2022); Wachs et al. (2019)

Other outcomes associated with cyberbullying

Research has found that cyberbullying prevention programs can have positive impacts beyond just reductions in cyberbullying. These positive impacts include broader social, emotional and health outcomes across multiple levels (individual, peer, school, and family; see Tables 9 and 10).

The benefits extend beyond the individual. Some interventions have fostered more supportive peer environments, with students demonstrating increased prosocial behaviours and a greater willingness to intervene against bullying. At the school level, these programs have been linked to improved school climate, with students reporting feeling safer and more connected to their school community. In some cases, positive effects have even extended to reduced truancy and aggressive behaviour. Finally, some interventions have involved parents, leading to increased parental involvement and supervision of online activities. This family-level engagement can further reinforce the positive changes seen at other levels.

Table 9. Other outcomes associated with cyberbullying: individual and peer levels

Intervention type	Key findings
INDIVIDUAL OUTCOMES	
Risky online behaviours	
Classroom-delivered, teacher-led (digital citizenship, SEL)	Reduced cyberbullying, problematic internet use, nomophobia, online grooming and sexting (Ortega-Baron et al., 2021)
Brief researcher-led (cyberbullying education, SEL)	Reduced cyberbullying, but not online grooming (Calvete et al., 2021)
Brief online (cyberbullying education, SEL)	Reduced cyberbullying others, online grooming and sexting (Calvete et al., 2023)
Face-to-face bullying involvement	
Classroom-delivered, teacher-led (SEL, digital citizenship)	Reduced bullying others, being bullied face-to-face and fighting (Ferrer-Cascales et al. 2019)
Classroom-delivered, teacher-led (SEL, cyberbullying education, positive bystander education)	Reduced bullying others and being bullied face-to-face (Benítez-Sillero et al., 2021)
Classroom-delivered, teacher-led musical (SEL)	Reduced being bullied face-to-face (Epelde-Larranaga, 2020)
Health practitioner-led (cyberbullying and positive bystander education)	Reduced bullying others face-to-face and relational bullying (Ingram et al., 2019)
Teacher-led (relational issues and positive bystander education)	Reduced bullying others face-to-face and physical violence; no effect on being bullied or experiencing physical violence (Vivolo-Kantor et al., 2021)
Teacher-led (cyberbullying education, social management)	Reduced bullying others face-to-face and improved bullying awareness; no effects on being bullied face-to-face or student acceptance of the curriculum (Peng et al., 2022)
Brief researcher-led (cyberbullying education, SEL)	Reduced bullying others face-to-face but not being bullied face-to-face (Calvete, Orue, Fernandez-Gonzalez et al., 2019)
Cyberbullying awareness, attitudes and responses	
Practitioner-led online (SEL, positive bystander education)	Positive impact on intervening in cyberbullying and positive bystander responses tried, but not on being cyberbullied or emotional affect (Kutok et al., 2021)

Intervention type	Key findings
Teacher-led (SEL, cyberbullying education, digital citizenship)	Improved awareness of cyberbullying social dynamics and coping strategies (Guarini et al., 2019)
Teacher-led (SEL, positive bystander education, digital citizenship)	Reduced bullying others online, but no significant effects on cyberbullying others or normative beliefs about cyberbullying (Zagorscak et al., 2019)
Teacher-led (cyberbullying education, digital citizenship, positive bystander education)	Increase in online safety and cyberbullying awareness, likelihood to report cyber-abuse to police and reduction in risky behaviours; no reduction in image-based abuse, perception of risk or likelihood to report cyber-abuse to an adult or friend (Alderman, Ariel, Harinam, 2023)
Digital citizenship	
Researcher-led online (SEL, digital citizenship)	Improved digital citizenship (Brandau et al., 2022)
Teacher-led (respectful interaction, safe and secure use of technology, conflict resolution)	Increased curriculum knowledge in digital citizenship, online conflict resolution, resisting media and online peer pressure (Bickam et al., 2021)
Bystander involvement and responses	
Text-message intervention (educational materials, scenarios)	Increased likelihood of intervening in cyberbullying on social media (Ortiz & Smith, 2024)
Practitioner-led online (SEL, positive bystander education)	Improved efficacy and intention to intervene in situations of cyberbullying, but not frequency of intervention or observed cyberbullying incidents (Kutok et al., 2021)
Practitioner-led (cyberbullying education, positive bystander education)	Increased students' willingness to intervene in cyberbullying situations (Ingram et al., 2021)
School-wide conflict prevention and resolution with ongoing dialogue	Student peers were more likely to intervene in cyberbullying incidents when social norms promoted it as brave or attractive (Villarejo-Carballido et al., 2019)
Classroom-delivered, musical intervention (SEL education)	Reduction in observed cyberbullying and face-to-face bullying incidents (Epelde-Larranaga, 2020)
Classroom-delivered (digital resilience, citizenship, and positive bystander education)	Improved the efficacy of primary school-aged children to stand up for themselves and others in cyberbullying incidents, as well as the frequency of seeking help from trusted adult in such situations (Lee & Hancock, 2023)
Bystander attitude change intervention	Through promotion of positive subjective norms, children's intention to intervene in situations of cyberbullying increased (Vlaanderen, Bevelander & Kleemans, 2020)
Pre-service health professional-led (cyberbullying education, digital citizenship, positive bystander education)	Increased help-seeking in cyberbullying situations (upper primary, not lower primary) and likelihood to include peers in online groups when they are left out; no increase in empathy for cyberbullied peers; no effects were sustained in the long-term (Lukacs et al., 2023)
Health and wellbeing	
Classroom-delivered, teacher-led (SEL)	Reduced e-cigarette use (Bonnell et al., 2020)

Intervention type	Key findings
Classroom-delivered, teacher led (SEL, cyberbullying education, digital citizenship, positive bystander education)	Reduced somatic complaints (Zagorscak et al., 2019)
Classroom-delivered, teacher-led (SEL, cyberbullying education, digital citizenship, positive bystander education)	Reduced likelihood of being cyberbullied; no significant effect on self-esteem (Aizenkot & Kashy-Rosenbaum, 2020)
Online (SEL, cyberbullying education)	No significant effect on cyberbullying others, eating problems, social anxiety, depressive symptom or non-suicidal self-injury (Calvete, Orue, Echezarraga et al., 2020)
School sandbox group play	Reduced depressive symptoms and suicidal ideation; promoted self-esteem in cyberbullied children (Lee & Yeom et al., 2023)
Social and emotional development	
Whole-school (teacher and family training, personal and social skills, technological skills)	Improved emotional self-awareness and problem-solving capabilities (Builds et al., 2020)
Coping strategies	
Online psychoeducational program on cyberbullying	Promoted engagement in coping strategies like self-compassion, challenging unhelpful thinking, seeking adult help and seeking mental health support (Chillemi et al., 2020)
Presentations on online safety risks and cyberbullying	Promoted engagement in preventative cyber-risk behaviour (removing personal information) and coping with cyberbullying (using technology features, reframing, seeking help; Damra & Omari, 2023)
Modularised, theory-based (Theory of Planned Behaviour)	Promoted protective cyber-behaviours and coping strategies for dealing with cyberbullying incidents (Yurdakul & Ayhan, 2022)
PEER OUTCOMES	
Peer aggression	
Classroom-delivered, teacher-led (SEL)	Reduced levels of observed student aggression (Bonnell et al., 2020).
Prosocial peer behaviour	
Classroom-delivered, teacher-led (SEL, cyberbullying education, digital citizenship, positive bystander education)	Increased frequency of students helping others (Ortega-Baron et al., 2021)
Classroom-delivered, teacher-led (SEL, cyberbullying education, positive bystander education)	Improved students' reports that students tried to stop bullying (Tirri et al., 2020)
Perceived popularity	
Classroom-delivered, teacher-led (SEL, cyberbullying education, digital citizenship, positive bystander education)	No significant impact on perceived popularity

Table 10. Other outcomes associated with cyberbullying: school and family levels

Intervention Type	Key Findings
SCHOOL OUTCOMES	
Positive school climate	
Practitioner-led (cyberbullying and positive bystander education)	Reduced levels of cyberbullying others and improved sense of belonging at school (Ingram et al., 2019)
Classroom-delivered, teacher-led (SEL, positive bystander education, cyberbullying education, digital citizenship)	Improved perceptions that adults try to stop cyberbullying and teachers care (Tirri et al., 2020)
Classroom-delivered, teacher-led (SEL, cyberbullying education, digital citizenship, positive bystander education)	Improved perceptions that teachers support them (Ortega-Baron et al., 2021)
Classroom-delivered, teacher-led (SEL, digital citizenship)	Increased sense of belonging, cooperation, and satisfaction at school; no significant effect on communication between family and school (Ferrer-Cascales et al., 2019)
School safety	
Classroom-delivered, teacher-led (SEL, cyberbullying education, positive bystander education)	Increased feelings of safety at school (Bonnell et al., 2020; Tirri et al., 2020)
Truancy	
Classroom-delivered, teacher-led (SEL)	Reduced levels of truancy (Bonnell et al., 2020)
Aggressive behaviours	
Classroom-delivered, teacher-led (SEL)	Reduced aggressive behaviour at and outside school, decreased participation in disciplinary procedures (Bonnell et al., 2020)
Awareness of school ICT policies	
Policy-based digital citizenship (resources and support to develop ICT policies)	Greater awareness of school policies on ICT risk prevention and ICT incidents; no significant effect on ICT risk awareness or cyberbullying outcomes (Fiorentini et al., 2020)
Teacher involvement	
Whole-school (teacher and family training, personal and social skills, technological skills)	Increased teacher involvement in students' online activities (Buils et al., 2020)
FAMILY OUTCOMES	
Parental involvement	
Whole-school (parent training, SEL curriculum)	Increased parental supervision and involvement in children's online activities (Buils et al., 2020)

Summary and implications

This chapter comprehensively explores the landscape of school-based cyberbullying prevention programs, analysing their effectiveness and key components. The research overwhelmingly demonstrates that these programs are effective in reducing the incidence of students cyberbullying others and students experiencing cyberbullying. A critical finding is the need for a multifaceted approach that highlights the importance of SEL, cyberbullying, positive bystander and digital citizenship education. These key components equip students with essential skills like emotional regulation, empathy, positive communication, responsible and safe online behaviours, identifying and being aware of cyberbullying and standing up for others in such situations. Programs featuring these elements not only address cyberbullying but also positively impact closely related issues such as face-to-face bullying, wellbeing and school climate.

Implementation characteristics highlighted as a part of successful cyberbullying prevention programming have included universal interventions, whole-school approaches, and the active involvement of the whole school community (teachers, parents and peers). While most programs utilise non-digital formats, emerging evidence suggests digital health interventions can also be effective mediums. Incorporating high levels of student and teacher engagement, potentially through activities like peer tutoring and group discussions, appears to be crucial for program success. Additionally, tailoring to the local context and incorporating student voices ensures that the content and delivery of interventions are fit-for-context. While some studies haven't shown long-term program effects, overall, research indicates that cyberbullying prevention programs are a valuable tool for creating safer online environments for students.

Importantly, this review found that the quality of cyberbullying policy and practice implementation affected the extent to which cyberbullying interventions could improve outcomes for children and adolescents experiencing cyberbullying. These implementation barriers included poor staff and other stakeholder readiness, limited staff time and capacity, poor alignment with school strategic planning, and limited local school data to identify student strengths and needs and to inform targeted action.

7

References

References

*included in the evidence review

*Abregú-Crespo, R., et al. (2024). School bullying in children and adolescents with neurodevelopmental and psychiatric conditions: A systematic review and meta-analysis. *Lancet Child & Adolescent Health*, *8(2*), 122-134. https://doi.org/10.1016/S2352-4642(23)00289-4

*Adorjan, M., & Ricciardelli, R. (2019). Student perspectives towards school responses to cyber-risk and safety: The presumption of the prudent digital citizen. *Learning Media and Technology, 44(4)*, 430-442. https://doi.org/10.1080/17439884.2019.1583671

*Adorjan, M., Ricciardelli, R., & Mukherjee, M. (2023). Responding to cyber-risk with restorative practices: Perceptions and experiences of Canadian educators. *British Journal of Educational Studies*, *21*. https://doi.org/10.1080/00071005.2023.2247475

*Agustiningsih, N., Yusuf, A., & Ahsan, A. (2024). Relationships among self-esteem, bullying, and cyberbullying in adolescents: A systematic review. *Journal of psychosocial nursing and mental health services*, 62(5), 11-17. https://doi.org/10.3928/02793695-20231013-01

*Aizenkot, D., & Kashy-Rosenbaum, G. (2020). The effectiveness of safe surfing, an anti-cyberbullying intervention program in reducing online and offline bullying and improving perceived popularity and self-esteem. *Cyberpsychology-Journal of Psychosocial Research on Cyberspace*, *14(3)*, 23, https://doi.org/10.5817/cp2020-3-6

* Alcalá, D. H., Río, J. F., Calvo, G. G., & Pueyo, A. P. (2019). Effects of a cooperative learning intervention program on cyberbullying in secondary education: A case study. *Qualitative Report, 24(10)*, 2426-2440. https://doi.org/10.46743/2160-3715/2019.3862

*Alderman, T., Ariel, B., & Harinam, V. (2023). Can a police-delivered intervention improve children' online safety? A cluster randomised controlled trial on the effect of the "ThinkUKnow" programme in primary and secondary Australian schools. *Journal of Experimental Criminology, 18*. https://doi.org/10.1007/s11292-023-09551-3

An, Y. J., & Reigeluth, C. (2011). Creating technology-enhanced, learner-centered classrooms: K–12 teachers' beliefs, perceptions, barriers, and support needs. *Journal of Digital Learning in Teacher Education, 28(2)*, 54-62. https://doi.org/10.1080/21532974.2011.10784681

*Awad, M. N., & Connors, E. H. (2023). Active bystandership by youth in the digital era: Microintervention strategies for responding to social media-based microaggressions and cyberbullying. *Psychological Services, 13*, https://doi.org/10.1037/ser0000749

*Bansal, S., et al. (2023). Perpetrators' perspective on cyberbullying: a qualitative systematic review with bibliometric analysis. *Library Hi Tech*, *33*. https://doi.org/10.1108/LHT-06-2023-0265

Barlett, C. P., Seyfert, L. W., Simmers, M. M., Chen, V. H. H., Cavalcanti, J. G., Krahe, B., Suzuki, K., Warburton, W. A., Wong, R. Y. M., Pimentel, C. E., & Skowronski, M. (2021). Cross-cultural similarities and differences in the theoretical predictors of cyberbullying perpetration: results from a seven-country study. *Aggressive Behavior, 47(1)*, 111-119. https://doi.org/10.1002/ab.21923

*Benítez-Sillero, J. D., Corredor-Corredor, D., Córdoba-Alcaide, F., & Calmaestra, J. (2021). Intervention programme to prevent bullying in adolescents in physical education classes (PREBULLPE): a quasi-experimental study. *Physical Education and Sport Pedagogy, 26(1)*, 36-50. https://doi.org/10.1080/17408989.2020.1799968

*Bonell, C., Dodd, M., Allen, E., Bevilacqua, L., McGowan, J., Opondo, C., Sturgess, J., Elbourne, D., Warren, E., & Viner, R. M. (2020). Broader impacts of an intervention to transform school environments on student behaviour and school functioning: post hoc analyses from the INCLUSIVE cluster randomised controlled trial. *BMJ Open, 10(5)*, 11. https://doi.org/10.1136/bmjopen-2019-031589

*Brandau, M., Dilley, T., Schaumleffel, C., & Himawan, L. (2022). Digital citizenship among Appalachian middle schoolers: The common sense digital citizenship curriculum. *Health Education Journal, 81(2)*, 157-169. https://doi.org/10.1177/00178969211056429

*Buelga, S., Cava, M. J., Ruiz, D. M., & Ortega-Barón, J. (2022). Cyberbullying and suicidal behavior in adolescent students: A systematic review. *Revista De Educacion (397)*, 43-68. https://doi.org/10.4438/1988-592x-re-2022-397-539

*Calvete, E., Cortazar, N., Fernández-González, L., Echezarraga, A., Beranuy, M., León, A., González-Cabrera, J., & Orue, I. (2021). Effects of a brief preventive intervention in cyberbullying and grooming in adolescents. *Psychosocial Intervention, 30(2)*, 75-84. https://doi.org/10.5093/pi2020a22

*Calvete, E., Fernández-González, L., & Orue, I. (2022). A growth mindset and self-affirmation intervention to reduce violent and risky online behaviors: The moderating role of previous victimization. *Journal of Interpersonal Violence, 27*. https://doi.org/10.1177/08862605221127221

Calvete, E., Orue, I., Echezarraga, A., Cortazar, N., & Fernandez-Gonzalez, L. (2022). A growth mindset intervention to promote resilience against online peer victimization: A randomized controlled trial. Computers in Human Behavior, 135*, 11. https://doi.org/10.1016/j.chb.2022.107373

*Calvete, E., Orue, I., Fernández-González, L., & Prieto-Fidalgo, A. (2019). Effects of an incremental theory of personality intervention on the reciprocity between bullying and cyberbullying victimization and perpetration in adolescents. *Plos One, 14(11)*, 17. https://doi.org/10.1371/journal.pone.0224755

*Calvo-Morata, A., Alonso-Fernández, C., Freire, M., Martínez-Ortiz, I., & Fernández-Manjón, B. (2020). Serious games to prevent and detect bullying and cyberbullying: A systematic serious games and literature review. *Computers & Education, 157*, 18. https://doi.org/10.1016/j.compedu.2020.103958

*Chen, Q. Q., Chan, K. L., Guo, S. Y., Chen, M. T., Lo, C. K. M., & Ip, P. (2023). Effectiveness of digital health interventions in reducing bullying and cyberbullying: A meta-analysis. *Trauma Violence & Abuse, 24(3)*, 1986-2002. https://doi.org/10.1177/15248380221082090

*Chen, L., Ho, S. S., & Lwin, M. O. (2017). A meta-analysis of factors predicting cyberbullying perpetration and victimization: From the social cognitive and media effects approach. *New Media & Society, 19*, 1194–1213. http://dx.doi.org/10.1177/1461444816634037

*Chicote-Beato, M., González-Víllora, S., Bodoque-Osma, A. R., & Olivas, R. N. (2024). Cyberbullying intervention and prevention programmes in primary education (6 to 12 years): A systematic review. *Aggression and Violent Behavior*, 101938. https://doi.org/10.1016/j.avb.2024.101938

Craig, W., Boniel-Nissim,M., King, N., Walsh, S.,Boer, M., Donnelly, P.,Harel-Fisch, Y., Malinowska-Cieślik, M., Matos, M., Cosma, A., Eijnden, R., Vieno, A., Elgar, F., Molcho, M., Bjereld, Y., Pickett, W. (2020). Social media use and cyber-nullying: A cross-national analysis of young people in 42 countries. *Journal of Adolescent Health, 66*. https://doi.org/10.1016/j.jadohealth.2020.03.006

Cross D, Shaw T, Hadwen K, Cardoso P, Slee P, Roberts C, et al. (2016) Longitudinal impact of the Cyber Friendly Schools program on adolescents' cyberbullying behavior. *Aggressive behavior, 42*, 166–80. http://doi.org/10.1002/ab.21609

De Bortoli, L., Underwood, C., Friedman, T., & Gebhardt, E. (2024). *PISA 2022. Reporting Australia's results. Volume II: Student and school characteristics*. Australian Council for Educational Research. https://doi.org/10.37517/978-1-74286-726-7

*Dennehy, R., Cronin, M., & Arensman, E. (2019). Involving young people in cyberbullying research: The implementation and evaluation of a rights-based approach. *Health Expectations*, *22*(1), 54-64. https://doi.org/10.1111/hex.12830

*Dorol-Beauroy-Eustache, O., & Mishara, B. L. (2021). Systematic review of risk and protective factors for suicidal and self-harm behaviors among children and adolescents involved with cyberbullying. *Preventive Medicine*, *152*, 12. https://doi.org/10.1016/j.ypmed.2021.106684

Doumas, D. M., & Midgett, A. (2021). The association between witnessing cyberbullying and depressive symptoms and social anxiety among elementary school students. *Psychology in the Schools*, *58*(3), 622-637. https://doi.org/10.1002/pits.22467

*Elsaesser, C., Russell, B., Ohannessian, C. M., & Patton, D. (2017). Parenting in a digital age: A review of parents' role in preventing adolescent cyberbullying. *Aggression and violent behavior*, *35*, 62-72. https://doi.org/10.1016/j.avb.2017.06.004

*Epelde-Larrañaga, A., Ramírez, J. A. O., & Estrada-Vidal, L. I. (2020). Music as a resource against bullying and cyberbullying: Intervention in two centers in Spain. *Sustainability, 12(5)*, 13. https://doi.org/10.3390/su12052057

*Esposito, C., De Masi, F., Dragone, M., & Bacchini, D. (2023). Technology-based interventions for preventing youth violence: A systematic review of programs, tools, and evidence. *Adolescent Research Review, 28*, https://doi.org/10.1007/s40894-023-00222-y

eSafety Commissioner (2018). *State of play: youth, kids and digital dangers*. Australian Government; Canberra, Australia.

eSafety Commissioner (2021). *The Digital Lives of Aussie Teens*. Australian Government; Canberra, Australia: 2021.

*Evangelio, C., Rodriguez-Gonzalez, P., Fernandez-Rio, J., & Gonzalez-Villora, S. (2022). Cyberbullying in elementary and middle school students: A systematic review. *Computers & Education, 176*, 18. https://doi.org/10.1016/j.compedu.2021.104356

*Farrington, D. P., Zych, I., Ttofi, M. M., & Gaffney, H. (2023). Cyberbullying research in Canada: A systematic review of the first 100 empirical studies. *Aggression and Violent Behavior*, *69*, 13. https://doi.org/10.1016/j.avb.2022.101811

*Ferrer-Cascales, R., Albaladejo-Blázquez, N., Sánchez-SanSegundo, M., Portilla-Tamarit, I., Lordan, O., & Ruiz-Robledillo, N. (2019). Effectiveness of the TEI Program for bullying and vyberbullying reduction and school climate improvement. *International Journal of Environmental Research and Public Health, 16(4)*, 13. https://doi.org/10.3390/ijerph16040580

*Fisher, B. W., Gardella, J. H., & Teurbe-Tolon, A. R. (2016). Peer cybervictimization among adolescents and the associated internalizing and externalizing problems: A meta-analysis. *Journal of Youth and Adolescence, 45*, 1727–1743. http://dx.doi.org/10.1007/s10964-016-0541-z

*Fiorentini, G., Palladino, B. E., Vespoli, G., & Menesini, E. (2022). ICTs opportunities and risks: Effectiveness of a nationwide intervention. *Cyberpsychology-Journal of Psychosocial Research on Cyberspace, 16(3)*, 16. https://doi.org/10.5817/cp2022-3-6

*Fraguas, D., Díaz-Caneja, C. M., Ayora, M., Durán-Cutilla, M., Abregú-Crespo, R., Ezquiaga-Bravo, I., Martín-Babarro, J., & Arango, C. (2021). Assessment of school anti-bullying interventions: A meta-

analysis of randomized clinical trials. *Jama Pediatrics*, *175(1)*, 44-55. https://doi.org/10.1001/jamapediatrics.2020.3541

*Fulantelli, G., Taibi, D., Scifo, L., Schwarze, V., & Eimler, S. C. (2022). Cyberbullying and cyberhate as two Interlinked instances of cyber-aggression in adolescence: A systematic review. *Frontiers in Psychology, 13*, 21. https://doi.org/10.3389/fpsyg.2022.909299

*Gabrielli, S., Rizzi, S., Carbone, S., & Piras, E. M. (2021). School interventions for bullying-cyberbullying prevention in adolescents: Insights from the UPRIGHT and CREEP projects. *International Journal of Environmental Research and Public Health*, *18(21)*, 13. https://doi.org/10.3390/ijerph182111697

*Gaffney, H., Farrington, D. P., Espelage, D. L., & Ttofi, M. M. (2019). Are cyberbullying intervention and prevention programs effective? A systematic and meta-analytical review. *Aggression and Violent Behavior, 45*, 134-153. https://doi.org/10.1016/j.avb.2018.07.002

Gámez-Guadix, M., & Mateos-Pérez, E. (2019). Longitudinal and reciprocal relationships between sexting, online sexual solicitations, and cyberbullying among minors. *Computer Human Behavior. 94*, 70-76. https://doi.org/10.1016/j.chb.2019.01.004

*Guarini, A., Menin, D., Menabò, L., & Brighi, A. (2019). RPC teacher-based program for improving coping strategies to deal with cyberbullying. *International Journal of Environmental Research and Public Health, 16(6)*, 14. https://doi.org/10.3390/ijerph16060948

*Guo, S. Y. (2016). A meta-analysis of the predictors of cyberbullying perpetration and victimization. *Psychology in the Schools*, *53*, 432–453. http://dx.doi.org/10.1002/pits. 21914

*Hajnal, A. (2021). Cyberbullying prevention: Which design features foster the effectiveness of school-based programs? A meta-analytic approach. *Intersections. East European Journal of Society and Politics, 7(1)*, 40-58. https://doi.org/10.17356/ieejsp.v7i1.648

Heirman, W., & Walrave, M. (2008). Assessing concerns and issues about the mediation of technology in cyberbullying. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 2(2)*, Article 1. https://cyberpsychology.eu/article/view/4214

*Henares-Montiel, J., Benitez-Hidalgo, V., Ruiz-Perez, I., Pastor-Moreno, G., & Rodriguez-Barranco, M. (2022). Cyberbullying and associated factors in member countries of the European Union: A systematic review and meta-analysis of studies with representative population samples. *International Journal of Environmental Research and Public Health*, *19(12)*, 13. https://doi.org/10.3390/ijerph19127364

*Hendry, B. P., Hellsten, L. A. M., McIntyre, L. J., & Smith, B. R. R. (2023). Recommendations for cyberbullying prevention and intervention: A Western Canadian perspective from key stakeholders. Frontiers in Psychology, 14, 10. https://doi.org/10.3389/fpsyg.2023.1067484

*Ingram, K. M., Espelage, D. L., Merrin, G. J., Valido, A., Heinhorst, J., & Joyce, M. (2019). Evaluation of a virtual reality enhanced bullying prevention curriculum pilot trial. *Journal of Adolescence, 71*, 72-83. https://doi.org/10.1016/j.adolescence.2018.12.006

Holloway, D., Green, L., & Livingstone, S. (2013). Zero to eight: Young children and their internet use. Retrieved from EU Kids Online: http://eprints.lse.ac.uk/52630/1/Zero_to_eight.pdf

Humphry, J., Boichak, O., & Hutchinson, J. (2023). *Emerging Online Safety Issues - Co-creating social media education with young people. Research Report.* The University of Sydney, Australia.

*Hutson, E., Kelly, S., & Militello, L. K. (2018). Systematic review of cyberbullying interventions for youth and parents with implications for evidence-based practice. *Worldviews on evidence-based*

nursing, 15(1), 72-79. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8074991/pdf/nihms-1690634.pdf

*Jadambaa, A., Thomas, H. J., Scott, J. G., Graves, N., Brain, D., & Pacella, R. (2019). Prevalence of traditional bullying and cyberbullying among children and adolescents in Australia: A systematic review and meta-analysis. *Australian and New Zealand Journal of Psychiatry, 53(9)*, 878-888. https://doi.org/10.1177/0004867419846393

*Jeyagobi, S., Munusamy, S., Kamaluddin, M. R., Badayai, A. R. A., & Kumar, J. (2022). Factors influencing negative cyber-bystander behavior: A systematic literature review. *Frontiers in Public Health, 10*, 16. https://doi.org/10.3389/fpubh.2022.965017

*Kamaruddin, I. K., Ma'rof, A. M., Nazan, A., & Ab Jalil, H. (2023). A systematic review and meta-analysis of interventions to decrease cyberbullying perpetration and victimization: An in-depth analysis within the Asia Pacific region. *Frontiers in Psychiatry, 14*, 13. https://doi.org/10.3389/fpsyt.2023.1014258

Karmakar, Sayar and Das, Sanchari, Understanding the Rise of Twitter-Based Cyberbullying Due to COVID-19 through Comprehensive Statistical Evaluation (2021). *Proceedings of the 54th Hawaii International Conference on System Sciences*, Maui, Hawaii (Virtual). http://dx.doi.org/10.2139/ssrn.3768839

*Kim, M., Ellithorpe, M., & Burt, S. A. (2023). Anonymity and its role in digital aggression: A systematic review. *Aggression and Violent Behavior, 72*, 11. https://doi.org/10.1016/j.avb.2023.101856

*Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., & Lattanner, M. R. (2014). Bullying in the digital age: a critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin, 140(4)*, 1073. https://doi.org/10.1037/a0035618

*Kutok, E. R., Dunsiger, S., Patena, J. V., Nugent, N. R., Riese, A., Rosen, R. K., & Ranney, M. L. (2021). A cyberbullying media-based prevention itervention for adolescents on Instagram: Pilot randomized controlled trial. *JMIR Mental Health, 8(9)*, 16. https://doi.org/10.2196/26029

*Kwan, I., Dickson, K., Richardson, M., MacDowall, W., Burchett, H., Stansfield, C., Brunton, G., Sutcliffe, K., & Thomas, J. (2020). Cyberbullying and children and young people's mental health: A systematic map of systematic reviews. *Cyberpsychology Behavior and Social Networking, 23(2)*, 72-82. https://doi.org/10.1089/cyber.2019.0370

*Lan, M., Law, N., & Pan, Q. Q. (2022). Effectiveness of anti-cyberbullying educational programs: A socio-ecologically grounded systematic review and meta-analysis. *Computers in Human Behavior, 130, 16*. https://doi.org/10.1016/j.chb.2022.107200

Langford, R., Bonell, C., Jones, H., Pouliou, T., Murphy, S., Waters, E., Komo, K., Gibbs, K., Magnus, D., & Campbell, R. (2015). The World Health Organization's Health Promoting Schools framework: a Cochrane systematic review and meta-analysis. *BMC Public Health, 15*, 1-15. https://doi.org/10.1186/s12889-015-1360-y

Lavoipierre, A. and Florance, L. (2024, 2 June). Many blame social media for poor mental health among teenagers, but the science is murky. *ABC News*. https://www.abc.net.au/news/2024-06-02/is-social-media-facebook-instagram-linked-to-teen-mental-health/103838726

Leung ANM, Wong N, Farver JM. (2019) Testing the effectiveness of an e-course to combat cyberbullying. *Cyberpsychology, behavior, and social networking, 22*, 569–77. https://doi.org/10.1089/cyber.2018.0609

*Li, C., Wang, P., Martin-Moratinos, M., Bella-Fernandez, M., & Blasco-Fontecilla, H. (2022). Traditional bullying and cyberbullying in the digital age and its associated mental health problems

in children and adolescents: A meta-analysis. *European Child & Adolescent Psychiatry*, *15*. https://doi.org/10.1007/s00787-022-02128-x

Liau AK, Park Y, Gentile DA, Katna DP, Tan CHA, Khoo A, et al. (2017). Adventure: evaluating the effectiveness of a peer-mentoring and transmedia cyberwellness program for children. *Psychology of popular media culture, 6*, 326–37. https://doi.org/10.1037/ppm0000094

*Lim, W., Lau, B. T., & Islam, F. M. A. (2023). Cyberbullying Awareness Intervention in Digital and Non-digital Environment for Youth: Current Knowledge. Education and Information Technologies, 28(6), 6869-6925. https://doi.org/10.1007/s10639-022-11472-z

Lin S, Li Y, Sheng J, Wang L, Han Y, Yang X, Yu C, Chen J. (2023) Cybervictimization and non-suicidal self-injury among Chinese adolescents: A longitudinal moderated mediation model. *Journal of Affective Disorders*, *15*, 329:470-476. https://doi:10.1016/j.jad.2023.02.124

*Lo Cricchio, M. G., García-Poole, C., te Brinke, L. W., Bianchi, D., & Menesini, E. (2021). Moral disengagement and cyberbullying involvement: A systematic review. *European Journal of Developmental Psychology, 18(2)*, 271-311. https://doi.org/10.1080/17405629.2020.1782186

*Lozano-Blasco, R., Barreiro-Collazo, A., Romero-Gonzalez, B., & Soto-Sanchez, A. (2023A). The family context in cybervictimization: a systematic review and meta-analysis. *Trauma, Violence, & Abuse*. https://doi.org/10.1177/15248380231207894

Lozano-Blasco, R., Cortés-Pascual, A., Latorre-Martínez, M.P., (2020) Being a cybervictim and a cyberbully – The duality of cyberbullying: A meta-analysis. *Computers in Human Behaviour. 111(50)*, 106444. https://doi.org/10.1016/j.chb.2020.106444

*Lozano-Blasco, R., Quilez-Robres, A., & Latorre-Cosculluela, C. (2023B). Sex, age and cyber-victimization: A meta-analysis. *Computers in Human Behavior, 139*, 10. https://doi.org/10.1016/j.chb.2022.107491

Macaulay, P. J., Steer, O. L., & Betts, L. R. (2024). Bystander intervention to cyberbullying on social media. In *Handbook of Social Media Use Online Relationships, Security, Privacy, and Society Volume 2* (pp. 73-99). Academic Press. https://doi.org/10.1016/B978-0-443-288043.00001-6

*Marciano, L., Schulz, P. J., & Camerini, A.-L. (2020). Cyberbullying perpetration and victimization in youth: A meta-analysis of longitudinal studies. *Journal of Computer-Mediated Communication, 25(2)*, 163–181. https://doi.org/10.1093/jcmc/zmz031

*Martinez-Monteagudo, A., Martinez-Monteagudo, M. C., & Delgado, B. (2023). School bullying and cyberbullying in academically gifted students: A systematic review. *Aggression and Violent Behavior, 71*, 12. https://doi.org/10.1016/j.avb.2023.101842

*Milosevic, T., Verma, K., Carter, M., Vigil, S., Laffan, D., Davis, B., & Norman, J. O. (2023). Effectiveness of artificial intelligence-based cyberbullying interventions from youth perspective. *Social Media + Society, 9(1)*, 12. https://doi.org/10.1177/20563051221147325

Modecki, K. L., Minchin, J., Harbaugh, A. G., Guerra, N. G., & Runions, K. C. (2014). Bullying prevalence across contexts: A meta-analysis measuring cyber and traditional bullying. *Journal of Adolescent Health, 55(5)*, 602-611. https://doi.org/10.1016/j.jadohealth.2014.06.007

*Molero, M. M., Martos, A., Barragan, A. B., Perez-Fuentes, M. C., & Gazquez, J. J. (2022). Anxiety and depression from cybervictimization in adolescents: A metaanalysis and meta-regression study. *The European Journal of Psychology Applied to Legal Context, 14(1)*, 42-50. https://doi.org/10.5093/ejpalc2022a5

*Mula-Falcón, J., & González, C. C. (2023). Effectiveness of cyberbullying prevention programmes on perpetration levels: a meta-analysis. *Revista Fuentes, 25(1)*, 1-14. https://doi.org/10.12795/revistafuentes.2023.21525

Mullis, I.V.S., Martin, M.O., Foy, P.K., Dana L., Fishbein, B. (2019). *TIMSS 2019 International Results in Mathematics and Science*. Boston College.

*Ng, E. D., Chua, J. Y. X., & Shorey, S. (2022). The effectiveness of educational interventions on traditional bullying and cyberbullying among adolescents: A systematic review and meta-analysis. *Trauma Violence & Abuse, 23(1)*, 132-151. https://doi.org/10.1177/1524838020933867

Ofcom (2023). *Making communications work for everyone: Online Nation 2023 Report*. Office of Communications, UK.

*Ortiz, R. R., & Smith, A. (2023). Assessing the feasibility of a text message intervention to promote bystander intervention to adolescents. *Journal of School Violence, 22(4)*, 490-501. https://doi.org/https://dx.doi.org/10.1080/15388220.2023.2214739

*Ortega-Barón, J., Buelga, S., Cava, M. J., & Iranzo, B. (2022). Efficacy of the Prev@cib 2.0 program in cyberbullying, helping behaviors and perception of help from the teacher. Electronic Journal of Research in Educational Psychology, 20(2), 427-448. https://doi.org/10.3390/ijerph16040527

*Ortega-Barón, J., Gonzalez-Cabrera, J., Machimbarrena, J. M., & Montiel, I. (2021). Safety.Net: A pilot study on a multi-risk internet prevention program. *International Journal of Environmental Research and Public Health, 18(8)*, 14. https://doi.org/10.3390/ijerph18084249

*Pardo-Gonzalez, E., & Souza, S. B. (2022). What do parents think about cyberbullying? A systematic review of qualitative studies. *Revista De Educacion, 397*, 97-124. https://doi.org/10.4438/1988-592x-re-2022-397-541

*Park, M. S. A., Golden, K. J., Vizcaino-Vickers, S., Dung, J. D., & Raj, S. (2021). Sociocultural values, attitudes and risk factors associated with adolescent cyberbullying in East Asia: A systematic review. *Cyberpsychology-Journal of Psychosocial Research on Cyberspace, 15(1)*, 19. https://doi.org/10.5817/cp2021-1-5

*Peng, Z. K., Li, L. P., Su, X. F., & Lu, Y. G. (2022). A pilot intervention study on bullying prevention among junior high school students in Shantou, China. *BMC Public Health, 22(1)*, 9. https://doi.org/10.1186/s12889-022-12669-0

*Pennell, D., Campbell, M., & Tangen, D. (2020). What influences Australian secondary schools in their efforts to prevent and intervene in cyberbullying? *Educational Research, 62(3)*, 284-303. https://doi.org/10.1080/00131881.2020.1795701

Plowman, L., Stevenson, O., McPake, J., Stephen, C., & Adey, C. (2011). Parents, pre-schoolers and learning with technology at home: some implications for policy. *Journal of Computer Assisted Learning, 27(4)*, 361-371. https://doi.org/10.1111/j.1365-2729.2011.00432.x

*Polanin, J. R., Espelage, D. L., Grotpeter, J. K., Ingram, K., Michaelson, L., Spinney, E., Valido, A., El Sheikh, A., Torgal, C., & Robinson, L. (2022). A systematic review and meta-analysis of interventions to decrease cyberbullying perpetration and victimization. *Prevention Science, 23(3)*, 439-454. https://doi.org/10.1007/s11121-021-01259-y

*Predescu, E., Calugar, I., & Sipos, R. (2024). Cyberbullying and non-suicidal self-injury (NSSI) in adolescence: exploring moderators and mediators through a systematic review. *Children, 11(4)*, 410. https://doi.org/10.3390/children11040410

Popovac, M., Fine, P.A. (2018). An intervention using the information-motivation-behavioral skills model: Tackling cyberaggression and cyberbullying in South African adolescents. *Reducing Cyberbullying in Schools: International Evidence-based Best Practices*, 225-244. https://doi.org/10.1016/B978-0-12-811423-0.00017-1

*Pyzalski, J., Plichta, P., Szuster, A., & Barlinska, J. (2022). Cyberbullying characteristics and prevention: What can we learn from narratives provided by adolescents and their teachers?. *International Journal of Environmental Research and Public Health, 19(18)*, 26. https://doi.org/10.3390/ijerph191811589

*Ranjith, P. J., Vranda, M. N., & Kishore, M. T. (2024). Barriers to mental health support in cyberbullying: A thematic analysis of what mental health professionals and cyber experts Think. *Indian Journal of Psychological Medicine*. https://doi.org/10.1177/02537176241253390

*Ranney, M. L., Pittman, S. K., Moseley, I., Morgan, K. E., Riese, A., Ybarra, M., Cunningham, R., & Rosen, R. (2021). Cyberbullying prevention for adolescents: Iterative qualitative methods for mobile intervention design. *JMIR Formative Research, 5(8)*, 13, Article e25900. https://doi.org/10.2196/25900

*Said-Hung, E., Gonzalez-Prieto, E., & Pallarès-Piquer, M. (2021). Preventing cyberbullying through ICT-centric education: a case study. *Technology Pedagogy and Education, 30(3)*, 459-472. https://doi.org/10.1080/1475939x.2021.1908415

*Sahin, S. S., & Ayaz-Alkaya, S. (2024). The effect of motivational interviewing on peer bullying and cyberbullying in adolescents: A randomized controlled trial. *Journal of Nursing Scholarship, 10*. https://doi.org/10.1111/jnu.12959

Sanders, W., Parent, J., Forehand, R., Sullivan, A. D. W., & Jones, D. J. (2016). Parental perceptions of technology and technology-focused parenting: Associations with youth screen time. *Journal of Applied Developmental Psychology, 44*, 28-38. https://doi.org/10.1016/j.appdev.2016.02.005

*Senekal, J. S., Groenewald, G. R., Wolfaardt, L., Jansen, C., & Williams, K. (2023). Social media and adolescent psychosocial development: a systematic review. *South African Journal of Psychology, 53(2)*, 157-171. https://doi.org/10.1177/00812463221119302

Sorrentino, A., Baldry, A. C., Farrington, D. P., & Blaya, C. (2019). Epidemiology of cyberbullying across Europe: Differences between countries and genders. *Educational Sciences: Theory & Practice, 19(2)*, 74-91. http://doi.org/10.12738/estp.2019.2.005

Symons, K., Ponnet, K., Walrave, M., & Heirman, W. (2017). A qualitative study into parental mediation of adolescents' internet use. *Computers in Human Behavior, 73*, 423-432. https://doi.org/10.1016/j.chb.2017.04.004

Tapingkae P, Panjaburee P, Hwang G-J, Srisawasdi N. (2020). Effects of a formative assessment-based contextual gaming approach on students' digital citizenship behaviours, learning motivations, and perceptions. *Computers & Education, 159*,103998. https://doi.org/10.1016/j.compedu.2020.103998

*Thompson, R. (2022). Teachers and cyberbullying: Interventions, workarounds and frustrations. Asia-*Pacific Journal of Teacher Education, 50(2)*, 187-201. https://doi.org/10.1080/1359866x.2021.1895967

*Tiiri, E., Luntamo, T., Mishina, K., Sillanmäki, L., Klomek, A. B., & Sourander, A. (2020). Did bullying victimization decrease after nationwide school-based antibullying program? A time-trend Study. *Journal of the American Academy of Child and Adolescent Psychiatry, 59(4)*, 531-540. https://doi.org/10.1016/j.jaac.2019.03.023

*Torgal, C., Espelage, D. L., Polanin, J. R., Ingram, K. M., Robinson, L. E., El Sheikh, A. J., & Valido, A. (2023). A meta-analysis of school-based cyberbullying prevention programs' impact on cyber-bystander behavior. *School Psychology Review, 52(2)*, 95-109. https://doi.org/10.1080/2372966x.2021.1913037

*Tozzo, P., Cuman, O., Moratto, E., & Caenazzo, L. (2022). Family and educational Strategies for cyberbullying prevention: A Systematic Review. *International Journal of Environmental Research and Public Health, 19(16)*, 17. https://doi.org/10.3390/ijerph191610452

*Uludasdemir, D., & Küçük, S. (2024). Raising awareness among adolescent cyberbullies and their parents in Türkiye through a web-based cyberbullying education program based on Pender's health promotion model. *Journal of Pediatric Nursing: Nursing Care of Children & Families, 77*, 152-161. https://doi.org/10.1016/j.pedn.2024.03.027

*Villarejo-Carballido, B., Pulido, C. M., de Botton, L., & Serradell, O. (2019). Dialogic model of prevention and resolution of conflicts: Evidence of the success of cyberbullying prevention in a primary school in Catalonia. *International Journal of Environmental Research and Public Health, 16(6)*, 11. https://doi.org/10.3390/ijerph16060918

*Vivolo-Kantor, A. M., Holditch, P., Estefan, L. F., Le, V. D., Tracy, A. J., Latzman, N. E., Little, T. D., Lang, K. M., DeGue, S., & Tharp, A. T. (2021). Middle school effects of the Dating Matters® comprehensive teen dating violence prevention model on physical violence, bullying, and cyberbullying: A cluster-randomized controlled trial. *Prevention Science, 22(2)*, 162-162. https://doi.org/10.1007/s11121-020-01113-7

*Wachs, S., Bilz, L., Niproschke, S., & Schubarth, W. (2019). Bullying intervention in schools: A multilevel analysis of teachers' success in handling bullying from the students' perspective. *Journal of Early Adolescence, 39(5)*, 642-668. https://doi.org/10.1177/0272431618780423

*Walters, G. D. (2021). School-age bullying victimization and perpetration: A meta-analysis of prospective studies and research. *Trauma Violence & Abuse, 22(5)*, 1129-1139. https://doi.org/10.1177/1524838020906513

*Wang, Z. Y., & Jiang, S. (2022). Influence of parental neglect on cyberbullying perpetration: Moderated mediation model of smartphone addiction and self-regulation. *Health & Social Care in the Community, 30(6)*, 2372-2382. https://doi.org/10.1111/hsc.13787

Yang, J., Li, W., Wang, W., Gao, L., & Wang, X. (2021). Anger rumination and adolescents' cyberbullying perpetration: Moral disengagement and callous-unemotional traits as moderators. *Journal of Affective Disorders, 278*, 397-404. https://doi.org/10.1016/j.jad.2020.08.090

*Zagorscak, P., Schultze-Krumbholz, A., Heinrich, M., Wölfer, R., & Scheithauer, H. (2019). Efficacy of cyberbullying prevention on somatic symptoms: Randomized controlled trial applying a reasoned action approach. *Journal of Research on Adolescence, 29(4)*, 908-923 https://doi.org/10.1111/jora.12429

*Zhu, C. Y., Huang, S. Q., Evans, R., & Zhang, W. (2021). Cyberbullying among adolescents and children: A comprehensive review of the global situation, risk factors, and preventive measures. *Frontiers in Public Health, 9*, 12. https://doi.org/10.3389/fpubh.2021.634909

*Zych, I., Baldry, A. C., Farrington, D. P., & Llorent, V. J. (2019A). Are children involved in cyberbullying low on empathy? A systematic review and meta-analysis of research on empathy versus different cyberbullying roles. *Aggression and Violent Behavior, 45*, 83-97. https://doi.org/10.1016/j.avb.2018.03.004

*Zych, I., Farrington, D. P., & Ttofi, M. M. (2019B). Protective factors against bullying and cyberbullying: A systematic review of meta-analyses. *Aggression and Violent Behavior, 45*, 4-19. https://doi.org/10.1016/j.avb.2018.06.008

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Appendices

Appendix 1: Additional information about method

Table 11. Overview of evidence review steps

Review step	Details
Define review scope	Defining key concepts included in research questions
Search strategy development	Developing full search strategy, including search string (based on existing search terms), databases, inclusion and exclusion criteria (following PICOS criteria)
Sourcing of literature	Conducting searches, screening (1) titles and abstracts, and (2) full texts
Data extraction & synthesis	Preliminary identification and organisation of key findings
Literature Review Reporting	Developing a written report including executive summary, background, methodology, results, discussion, limitations, and conclusion sections
Synthesis and preparation for final report	Development of recommendations based on literature review for the final report

*PICO is an acronym for four different potential components of a health question used in Cochrane Review research: Patient, Population or Problem (characteristics there of e.g.: demographics, risk factors); Intervention (nature of the intervention for the target group); Comparison (the alternative to the intervention e.g.: control condition) and Outcome (included outcomes e.g.: mental health difficulties, wellbeing). These components provide the specific who, what, when, where and how, of an evidence-based research question. (Cochrane Library About PICO | Cochrane Library)

PART 2 SEARCH (Focus on Cyberbullying)		
Criteria Topic	**Included**	**Excluded**
Population/ Setting	• Primary and secondary school students (aged approximately 5 to 18 years), including specialist schools. • Australia and like international nations (e.g., Canada, UK, NZ, USA).	• Pre-school aged students/early childhood education settings. • TAFE, university and other higher education settings. • After-school care settings unless as part of primary or secondary school • Low-income countries.
Study design	• Meta-analyses, systematic reviews, scoping reviews, rapid reviews, narrative reviews. • Original research articles (i.e., including • Editorials, commentaries, conference abstracts, policy papers	• Grey literature e.g., government reports, OECD reports. • Theoretical articles. • Dissertations, reports, book chapters,
Outcome Measurement	• Meta-analyses or systematic reviews that examine factors or impacts related to cyberbullying involvement. • Original studies or syntheses of evidence evaluating the impact of interventions on cyberbullying involvement.	• Studies focused on solely on traditional bullying. • Studies on associated but distinct aspects of social experiences including broader constructs (e.g.: racism; perceived discrimination; stigma; peer exclusion; friendship quality; aggression and disruptive behaviour

	• Original studies or syntheses of evidence evaluating the implementation or process of interventions on cyberbullying involvement. • Studies examining specific negative cyber behaviours (i.e.: problematic internet use, problematic social media use, online gambling, sexting, sextortion, grooming).	problems).
Publication	• Published in English. • Peer-reviewed. • Studies published from 1 January 2019 to 20 May 2024.	• Published in any other language.

Literature screening

An initial search was conducted on 30 October 2023 in Web of Science, PsychINFO and ERIC, which produced 954 unique records from all three databases. Additional searches were conducted to update this review on 20 May 2024, and 1 July 2024. After removal of duplicates, these additional searches added to the overall tranche of articles to a total of 1103. 105 articles were found to fall under the four categories of interest after reviewing the content of the articles.

Additional contextual studies not identified from the search were included in the review. For example:

- In the case of umbrella evidence syntheses (reviews of reviews), findings were incorporated from the original reviews.
- One of the systematic reviews cited a systematic review on parents' roles in preventing adolescent cyberbullying published in 2017. This systematic review was incorporated to complement the small evidence base on this key issue that emerged from the search.

In addition to the categories of papers included in the review, the search also identified papers from three categories that were excluded, as they were beyond the scope of the review:

1. **Narrative reviews of cyberbullying interventions.** These reviewed cyberbullying interventions but did not use systematic review methods.
2. **Grey literature on cyberbullying**: These were policy-focused papers, editorial pieces, commentaries, conference proceedings or toolkits focused on cyberbullying.
3. **Primary studies of other online behaviours**: These articles focused on online behaviours such as sextortion, online gambling, grooming and sexual abuse. They examined risk and protective factors, impacts and/or interventions to address these online behaviours.

Appendix 2: Additional information about risk and protective factors

Method

The review drew primarily on meta-analyses and systematic reviews to identify risk and protective factors. One paper provided a systematic review of meta-analyses. Where applicable, these papers were read, and findings collated from the original meta-analyses (which were published prior to the search range) to report key findings and estimates of factor strength.

To provide deeper insights and contextual information, qualitative research was also included for key topics (e.g., distinctive features of cyberbullying).

Effect size criteria were based on Rice and Harris (2005, cited in Walters, 2021): $r \approx .10$ (small effect), $r \approx .24$ (moderate effect), $r \approx .37$ (large effect).

Criteria for including a factor as a risk or protective factor

A factor was listed in the review tables if the evidence for that factor came from:

- A meta-analysis which found a significant effect for that factor
- More than one peer-reviewed study, with most of those studies finding that it is a significant risk or protective factor. For example, most (but not all) studies found that females are more likely to be cyberbullied than males and this gender difference is significant in most studies.
- A single, well-designed study with one or more of the following features:
  - Longitudinal design
  - Triangulation of data (e.g., self-report plus an informant report such as parents)
  - Pre-registered study

A factor was also considered for listing in the tables if:

- The evidence came from a single quality study that was not longitudinal, triangulated data or was pre-registered, but had one or more of the following features:
  - Australian context
  - Nationally representative sample
- The factor is particularly useful to inform intervention points, but has not been studied extensively and the evidence is high quality.

A factor was not listed in the main tables if the evidence for that factor came from:

- Only one study with no notable quality features (e.g., not longitudinal).
- More than one study, but the evidence is mixed (e.g., age differences in cyberbullying); these factors were captured in the tables in this appendix.
- Only unpublished dissertations.
- Only narrative reviews.

Additional tables

Table 12. Factors not associated with cyberbullying, with mixed evidence or for which the evidence base is too small to draw conclusions

Factor	Cyberbullying others	Being cyberbullied	References
INDIVIDUAL			
Social and emotional factors			
Self-efficacy in defending against cyberbullying		very small strength protective factor	Chen et al. (2017)
Emotional regulation	not a significant factor		Zhu et al. (2021)
Emotional intelligence		unknown (not enough data)	Zhu et al. (2021)
Social intelligence		very small strength protective factor	Kowalski et al. (2014)
Sociality	not a significant factor		You and Lim (2016)
Prosocial behaviour		very small strength protective factor	Kowalski et al. (2014)
Life satisfaction		not a significant factor	Fisher et al. (2016)
Feelings of relative deprivation	unknown (not enough data)	unknown (not enough data)	Farrington et al. (2023)
Appearance evaluation		unknown (not enough data)	Zhu et al. (2021)
Demographics and background factors			
Age	mixed findings	mixed findings	Guo (2016); Kowalski et al. (2014); Lozano-Blasco et al. (2023B); Zhu et al. (2021)
Race	not a significant factor	not a significant factor	Guo (2016)
Sexual orientation		unknown (not enough data)	Fulantelli et al. (2022)
Academically gifted	unknown (not enough data)	mixed findings	Martinez-Monteagudo et al. (2023)
FAMILY			
Parents monitor child's activities online using **restrictive mediation** (e.g., limiting and controlling child's online activities) • Restrictive mediation less effective than active mediation • Restrictive mediation may be a risk factor for being cyberbullied	mixed findings	mixed findings	Elsaesser et al. (2017)

Factor	Cyberbullying others	Being cyberbullied	References
High parental monitoring of activities (not specifically online) • In a Canadian study, this was only the case for youth with an East Asian background	very small strength protective factor	very small strength protective factor	Elsaesser et al. (2017); Farrington et al. (2014); Kowalski et al. (2014)
Family socioeconomic status		unknown (not enough data)	Farrington et al. (2023)
Parents' education level		unknown (not enough data)	Farrington et al. (2023)
PEER			
Greater perceived support from peers		very small strength protective factor	Kowalski et al. (2014)
Number of school friends		not a significant factor	Farrington et al. (2023)
Popularity with peers	not a significant factor		Chen et al. (2017)

Note:

Some cells are grey because there are no findings to report from the literature reviewed. For example, while research was reviewed to determine the possible association between life satisfaction and being cyberbullied, no research was found that identified its possible association with cyberbullying others.

Appendix 3: Evidence syntheses of the effectiveness of cyberbullying interventions

Table 13. Syntheses of evidence on the effectiveness of cyberbullying prevention interventions

Study Authors	Year of Publication	Focus	Number of Studies	Year Range	Being Cyberbullied	Cyberbullying Others
Chen, Chan et al	2023	Digital Health Interventions	16	2011-2021	Significant positive improvement**	Significant positive improvement**
Fraguas et al	2020	School Anti-Bullying	69	Up to 2020	Significant positive improvement	
Gaffney et al	2019	Cyberbullying Interventions	24	2000-2019	Significant positive improvement	Significant positive improvement
Kamaruddin et al	2023	Cyberbullying in East Asia and Pacific	4	1995-2022	No significant positive improvement	No significant positive improvement
Lan et al	2022	Educational Programs for Cyberbullying	19	Up to 2022	Significant positive improvement	Significant positive improvement
Mula-Falcon & Gonzalez	2022	Cyberbullying Perpetration	17	2015-2019	Not measured	Significant positive improvement
Ng, Chu & Shorey	2022	Cyberbullying Interventions in Adolescents	17	Up to 2019	Significant positive improvement	Significant positive improvement
Polanin et al	2022	Cyberbullying Interventions	50	1995-2019	Significant positive improvement	Significant positive improvement
Wang & Jiang	2023	Parent-Related Cyberbullying Interventions	11	Up to 2021	Significant positive improvement	Significant positive improvement

Notes: *denotes small effect size, ** denotes medium effect size; For Lan et al., significant positive improvements were found for short term effects, and none for long term sustained effects. For Fraguas et al. (2020), cyberbullying involvement was pooled into a single outcome. Significant positive improvement was found for the pooled effect.