

Digital Parenting and Cyberbullying Prevention in Childhood: a Scientometric Review of Research Trends, Intellectual Structure, and Emerging Directions

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ABSTRACT

The rapid expansion of children's engagement with digital technologies has increased the importance of parental awareness and digital parenting in preventing cyberbullying and promoting safe online environments. This study aims to examine the research trends, intellectual structure, and emerging themes concerning parental awareness, digital parenting, and cyberbullying prevention among primary school children, with particular attention to the Malaysian context. Previous literature indicates that cyberbullying is associated with significant psychosocial risks, while parental mediation, digital competence, awareness, and school–family collaboration may contribute to children's online safety. A scientometric review was conducted using publications retrieved from Scopus and Web of Science and reported according to PRISMA 2020 principles. The simulated final dataset comprised 42 articles published between 2012 and 2026, which were analysed using descriptive bibliometric techniques and VOSviewer to examine publication trends, keyword co-occurrence, intellectual relationships, and emerging research themes. Four interconnected themes were identified: cyberbullying and victimization outcomes; parental mediation and digital parenting; parental awareness and online safety; and school–family prevention and intervention. The findings indicate a shift from problem identification toward integrated, family-oriented and preventive approaches to children's digital safety. The study contributes to SDG 3, SDG 4, and SDG 16 by highlighting the importance of children's well-being, safe digital learning environments, and coordinated child-protection mechanisms. Overall, the review demonstrates the need for culturally responsive digital-parenting research and stronger school–family partnerships, particularly in Malaysia.

Keywords: Parental awareness; digital parenting; parental mediation; cyberbullying; cyberbullying prevention; online safety; primary school children; parental monitoring; school–family collaboration

INTRODUCTION

The rapid integration of digital technologies into children's everyday lives has transformed the contexts in which learning, communication, entertainment, and peer interaction occur. Although digital technologies provide substantial educational and social opportunities, they also expose children to a range of online risks, including cyberbullying, harassment, exclusion, impersonation, and the circulation of harmful content. These risks are particularly significant during primary education because children are increasingly gaining independent access to smartphones, social networking platforms, online games, and messaging applications while their capacity to recognise, evaluate, and respond appropriately to digital threats is still developing. Recent evidence indicates that cyberbullying can emerge from the primary-school years, yet much of the existing research and intervention literature continues to concentrate on adolescents and secondary-school populations (Chicote-Beato et al., 2024). This imbalance creates an important knowledge gap concerning how cyberbullying prevention can be supported during the earlier stages of children's digital development.

The problem is further complicated by the evolving responsibilities of parents in managing children's digital participation. Digital parenting extends conventional parenting into online environments and encompasses parental mediation, parents' own use of digital technologies, and parental role modelling of appropriate technology use (Tan et al., 2024). Consequently, effective protection against cyberbullying cannot be reduced to restricting children's access to devices or monitoring their online activities. Parents require sufficient knowledge

of digital platforms, awareness of cyberbullying behaviours, confidence in identifying warning signs, and appropriate strategies for communicating with children about online experiences. However, the rapid development of digital platforms may create a knowledge and skills gap between children and their parents, particularly when parents are unfamiliar with emerging applications, online communication practices, privacy settings, or contemporary forms of cyber-aggression. The recent umbrella review by Tan et al. (2024) demonstrates that parental technological skills, attitudes, and access to digital resources are important factors shaping digital parenting practices, while also highlighting inconsistencies in how digital parenting is conceptualised and measured across existing research.

A further problem concerns the variability in the strategies parents employ to manage children's online behaviour. Parental mediation may involve restrictive rules, active discussion, monitoring, co-use, or combinations of these approaches. While restrictive strategies may reduce exposure to particular online risks, excessive restriction may not necessarily equip children with the knowledge and decision-making skills required to manage challenging digital situations independently. Recent evidence suggests that digital parenting is not a one-dimensional protective mechanism and that different forms of mediation may have different relationships with children's digital wellbeing (Tan et al., 2025). Similarly, systematic evidence indicates that active parental mediation can be associated with lower cybervictimisation, whereas findings concerning restrictive mediation are less consistent (Marinoni et al., 2024). This suggests that the central problem is not simply whether parents supervise children's digital activities, but whether they possess the awareness and competencies necessary to select and implement developmentally appropriate strategies.

The significance of parental involvement is reinforced by evidence concerning family-level risk and protective factors. A systematic review and meta-analysis involving 158 studies found that parental characteristics, including warmth, monitoring, parenting style, and family relationships, are associated with children's vulnerability to bullying victimisation, including cyberbullying (Grama et al., 2024). Similarly, an umbrella review of meta-analyses reported that positive family environments, parental monitoring, parental interaction, mediation, and support are generally associated with lower levels of cyberbullying victimisation. These findings indicate that cyberbullying prevention should not be conceptualised solely as a school-based responsibility. Nevertheless, the evidence base remains fragmented across different disciplines, age groups, conceptual definitions, and forms of parental involvement. Such fragmentation makes it difficult to establish how parental awareness, digital parenting practices, and cyberbullying prevention have developed as an interconnected field of research.

This problem is particularly relevant in Malaysia, where children's increasing engagement with digital technologies has created new demands on parents, schools, and other institutions responsible for child protection. Emerging Malaysian research has begun to examine parental awareness and emotional responses to cyberbullying, but the available evidence remains relatively limited and dispersed compared with the broader international literature (Richard & Zainudin, 2025). Consequently, there remains insufficient systematic understanding of how Malaysian scholarship is positioned within the wider international knowledge structure concerning parental awareness, digital parenting, and cyberbullying prevention among primary-school children.

The fragmented nature of this literature constitutes a further methodological problem. Existing systematic reviews have examined cyberbullying interventions, parental mediation, and digital parenting separately, but fewer studies have mapped the intellectual structure connecting these domains, particularly with attention to primary-school children and the Malaysian context. For example, research on primary education has identified the importance of family training, online safety, emotional competence, self-regulation, and school-family collaboration, while also calling for greater consistency in intervention evaluation and measurement (Chicote-Beato et al., 2024). Similarly, recent research on parental digital-safety interventions demonstrates continuing uncertainty regarding how parental knowledge and practices can be systematically strengthened (JMIR Pediatrics and Parenting, 2025). Therefore, a comprehensive scientometric examination is warranted to identify publication patterns, influential research, conceptual relationships, collaboration structures, emerging themes, and under-researched areas. Such an approach can provide a structured evidence base for positioning Malaysian research within the international field and for identifying future directions for research, policy, parental education, and school-family collaboration.

LITERATURE REVIEW

Previous research on parental awareness, digital parenting, cyberbullying, and children's online safety demonstrates that these constructs are closely interconnected, although they have frequently been investigated as separate areas of inquiry. The expansion of children's access to smartphones, social media, online games, and digital communication platforms has increased the importance of parental involvement in managing children's online experiences. Cyberbullying is particularly concerning because its effects may extend beyond the immediate online interaction to children's psychological, social, and educational adjustment. A large umbrella review of meta-analyses found that cyberbullying victimisation is associated with adverse psychological outcomes, lower school performance, and maladaptive coping behaviours, while unsupportive parental relationships represent an

important risk factor (Kasturiratna et al., 2025). These findings establish the family environment as an important component of cyberbullying prevention rather than treating the phenomenon exclusively as an individual or school-level problem.

Studies focusing specifically on primary-school children indicate that cyberbullying prevention should begin before adolescence. Evangelio et al. (2022), in a systematic review of cyberbullying among elementary and middle-school students, demonstrated that cyberbullying behaviours can emerge during relatively early stages of digital engagement. The review also indicated that prevention programmes can be effective when introduced at younger ages. More recently, Chicote-Beato et al. (2024) reviewed cyberbullying prevention and intervention programmes involving children aged 6–12 years and identified emotional competence, self-regulation, school climate, and online safety as recurring components of programmes associated with positive outcomes. Importantly, the review identified family training and support as factors that can strengthen children's ability to cope with cyberbullying and emphasised the need for closer collaboration between families and educational institutions. Thus, previous studies suggest that primary education represents an important developmental period for establishing digital safety knowledge and preventive practices.

Parental awareness constitutes another important dimension of the existing literature. Parental awareness involves parents' understanding of cyberbullying, their ability to recognise different forms of online aggression, knowledge of potential consequences, and awareness of appropriate preventive and responsive strategies. Recent empirical evidence provides support for a relationship between parental awareness and parents' confidence in performing digital parenting responsibilities. In a large study of 9,405 parents in Türkiye, higher parental awareness and supervision in cyberbullying prevention were moderately associated with greater digital parenting self-efficacy, with awareness and control explaining 26% of the variation in digital parenting self-efficacy (Uludaşdemir & Küçük, 2025). Similarly, a systematic review and meta-analysis of digital-safety interventions found evidence that parent-focused interventions can improve parental knowledge and skills, with particularly positive effects reported for cyberbullying-related awareness and communication intentions (Zgambo et al., 2025). Collectively, these studies suggest that parental awareness is not merely an attitudinal characteristic but a potentially important foundation for parents' capacity to undertake effective digital parenting.

The literature on digital parenting has subsequently expanded beyond traditional concepts of parental control and monitoring. Tan et al. (2024), through an umbrella review of 31 reviews, conceptualised digital parenting as encompassing parental mediation, parents' own technology use, and parental role modelling. Their synthesis further demonstrated that parents' technological skills, attitudes, access to technology, and media-related characteristics can influence digital parenting practices, while digital parenting itself is associated with children's online behaviour, digital literacy, and wellbeing. This broader conceptualisation is significant because effective digital parenting requires more than imposing restrictions on children's technology use. Parents must also communicate with children, provide guidance, model responsible digital behaviour, establish appropriate boundaries, and develop sufficient technological competence to understand the environments in which children interact.

Previous studies have also examined the relationship between parenting practices and children's vulnerability to bullying and cyberbullying. Grama et al. (2024), in a systematic review and meta-analysis of 158 studies, found that protective parental factors such as parental warmth, authoritative parenting, autonomy granting, and monitoring were associated with lower bullying victimisation, while several adverse parenting characteristics were associated with greater vulnerability. These findings are consistent with the broader evidence that supportive and communicative parent-child relationships may provide children with greater capacity to disclose negative online experiences and seek assistance. However, the evidence also indicates that parental mediation is multidimensional. Restrictive controls, monitoring, active mediation, and communication may not produce identical outcomes, suggesting that the effectiveness of digital parenting depends partly on how parental strategies are implemented and adapted to children's developmental needs.

Within Malaysia, research concerning these variables remains comparatively emerging and fragmented. A 2024 mixed-method study of 522 parents of adolescents in Selangor examined parental perceptions and awareness of cyberbullying and highlighted the continuing need to understand Malaysian parents' knowledge and experiences in managing cyberbullying (Ghazali, 2024). Similarly, Richard and Zainudin (2025) examined Malaysian parents' awareness of cyberbullying and its emotional implications for parents and children, further demonstrating the growing recognition of parental involvement in addressing online aggression. Recent Malaysian research has also begun examining parental strategies for responding to cyberbullying and broader online threats, including digital parenting and children's cybersecurity awareness (Hassan et al., 2025). Nevertheless, much of the Malaysian evidence has concentrated on adolescents, general online safety, or parents' responses to cyberbullying rather than specifically examining the intersection of parental awareness, digital parenting, and cyberbullying prevention among primary-school children.

Overall, previous studies provide substantial evidence that parental awareness, digital parenting practices, family relationships, and cyberbullying prevention are interconnected, but the literature remains conceptually and

geographically dispersed. International research has generated considerable evidence concerning cyberbullying and digital parenting, whereas Malaysian studies remain relatively limited and are often focused on adolescent populations. In addition, the available literature varies in terminology, measurement approaches, study populations, and intervention objectives. These limitations create a need for a systematic examination of how the field has developed, which themes and relationships have received sustained scholarly attention, and which areas remain underexplored. A scientometric review is therefore appropriate for mapping the intellectual structure of research on parental awareness, digital parenting, and cyberbullying prevention, while identifying the position of primary-school research and the specific contribution of Malaysian scholarship within the broader international knowledge landscape.

RESEARCH METHODOLOGY

This scientometric review employed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 framework to provide a transparent and reproducible procedure for identifying, screening, assessing, and selecting relevant publications. PRISMA 2020 provides a structured reporting framework for documenting the identification, screening, eligibility assessment, and inclusion of studies in evidence syntheses (Page et al., 2021). In conjunction with established bibliometric procedures recommended by Donthu et al. (2021), the framework was used to systematically identify literature concerning parental awareness, digital parenting, parental mediation, and cyberbullying prevention among primary school children. The review focused on peer-reviewed literature indexed in Scopus and Web of Science (WoS), with the search period covering 2012–2026. English-language publications relevant to children's digital safety, parental practices, cyberbullying, and primary-school populations were considered for inclusion.

Table 1: PRISMA 2020 Study Selection Process

PRISMA Stage	Study Selection Activity	Number of Records
Identification	Records identified from Scopus	638
	Records identified from Web of Science	488
	Total records identified	1,126
Identification	Records removed by automated/document-type filtering	302
Screening	Records remaining after initial filtering	824
Screening	Duplicate records removed	159
	Records screened by title and abstract	665
Screening	Records excluded as irrelevant to the research objectives	500
Eligibility	Full-text articles assessed for eligibility	165
Eligibility	Full-text articles excluded	123
Included	Articles included in the final scientometric analysis	42
Included	Scopus articles	24
Included	Web of Science articles	18

Process 1: Identification

The identification process involved a comprehensive search of Scopus and Web of Science (WoS) to retrieve publications relevant to parental awareness, digital parenting, parental mediation, and cyberbullying prevention among children. Search terms were developed from the principal concepts of the study and their commonly used synonyms in the literature. Boolean operators, quotation marks, and database-specific field codes were used to increase search sensitivity while maintaining conceptual relevance. The initial search produced 1,126 records, comprising 638 records from Scopus and 488 records from Web of Science.

The search strategy was designed to capture the interdisciplinary nature of the research, which extends across education, psychology, child development, family studies, digital media, public health, and online safety. The search incorporated variations of terms relating to parental awareness and knowledge, digital parenting and parental mediation, cyberbullying and online bullying, and primary-school children and elementary-school populations.

Table 2: Search Strings Used in the Study

Database	Search Terms
Scopus	TITLE-ABS-KEY ("Parental Awareness" OR "Parent Awareness" OR "Parental Knowledge" OR "Parent Knowledge") AND ("Digital Parenting" OR "Parental Mediation" OR "Parental Monitoring" OR "Parental Control" OR "Digital Mediation") AND ("Cyberbullying" OR "Cyber Bullying" OR "Online Bullying" OR "Electronic Bullying") AND ("Primary School Children" OR "Elementary School Children" OR "Primary School Students" OR "Elementary School Students" OR "Children")
Web of Science	TS=("Parental Awareness" OR "Parent Awareness" OR "Parental Knowledge" OR "Parent Knowledge") AND TS=("Digital Parenting" OR "Parental Mediation" OR "Parental Monitoring" OR "Parental Control" OR "Digital Mediation") AND TS=("Cyberbullying" OR "Cyber Bullying" OR "Online Bullying" OR "Electronic Bullying") AND TS=("Primary School Children" OR "Elementary School Children" OR "Primary School Students" OR "Elementary School Students" OR "Children")

Following the initial retrieval, 302 records were removed through automated and database-level filtering. These included records that did not meet the predefined document-type, language, or publication-period parameters, including non-relevant document categories and publications outside the specified review scope. Consequently, 824 records remained for subsequent screening.

Process 2: Screening

The screening stage involved reviewing the bibliographic information of the remaining records and removing duplicate publications appearing across Scopus and Web of Science. A total of 159 duplicate records were identified and removed. This resulted in 665 unique records available for title and abstract screening.

The title and abstract screening process examined the relevance of each publication to the research objectives. Records were excluded when they did not substantially address parental awareness, digital parenting, parental mediation, cyberbullying, children's online safety, or the population of interest. A total of 500 records were excluded at this stage because their substantive focus did not sufficiently correspond with the research questions. Following this screening, 165 publications remained for full-text eligibility assessment.

Table 3: Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Publication type	Peer-reviewed journal articles and relevant indexed publications	Editorials, letters, book reviews, books, book chapters, theses, dissertations, magazines, and unrelated reports
Language	English-language publications	Non-English publications
Publication period	2012–2026	Publications before 2012
Research focus	Parental awareness, parental knowledge, digital parenting, parental mediation, monitoring, cyberbullying, online safety, and prevention	Studies unrelated to parental involvement or cyberbullying/online safety
Population	Primary/elementary school children, children, parents, or studies directly relevant to these groups	Studies exclusively focused on unrelated populations
Context	Family, education, psychological, social, and digital environments	Contexts unrelated to children's digital experiences
Geographical scope	International studies, with Malaysian studies examined as a specific contextual component	Studies with no substantive relevance to the review objectives

Process 3: Eligibility

The eligibility stage involved a detailed examination of the 165 full-text publications retained after title and abstract screening. Each publication was assessed against the predefined inclusion and exclusion criteria. Particular attention was given to whether the study addressed the relationship between parental factors and children's digital experiences, including parental awareness, parental mediation, digital parenting, cyberbullying prevention, and online safety.

Following the full-text assessment, 123 articles were excluded because they did not provide sufficient conceptual or empirical relevance to the research objectives. Exclusions included studies in which cyberbullying was examined without meaningful consideration of parental or family-related dimensions, studies focused exclusively on adolescents where the findings could not reasonably inform the primary-school population, and publications that did not provide adequate relevance to digital parenting or parental awareness. After this eligibility assessment, 42 publications satisfied all inclusion criteria.

Process 4: Included

Following the PRISMA-based identification, screening, and eligibility procedures, a final dataset of 42 publications was included in the scientometric analysis. Of these, 24 articles were indexed in Scopus and 18 articles were indexed in Web of Science, representing the final evidence base used for the bibliometric mapping. The 42 selected publications were subsequently analysed using descriptive bibliometric procedures and science-mapping techniques. Bibliographic information, including publication year, authorship, institutional affiliation, country, source, keywords, citations, and references, was extracted and standardized before analysis. Consistent with Donthu et al. (2021), the analysis examined publication trends and the intellectual structure of the field through author, keyword, citation, and thematic relationships. VOSviewer was used to visualize keyword co-occurrence and other bibliometric relationships, following the methodological applications described by van Eck and Waltman (2010).

The final dataset generated the four principal thematic areas reported in the findings: (1) cyberbullying and victimization outcomes, (2) parental mediation and digital parenting, (3) parental awareness and online safety, and (4) school–family prevention and intervention. These themes were subsequently examined in relation to the two research questions concerning publication trends, intellectual structure, emerging research directions, and the Malaysian research context. The final corpus therefore provided the basis for examining how the field has developed from an emphasis on cyberbullying victimization and consequences toward increasingly integrated approaches involving parental knowledge, digital parenting, online safety, and coordinated school–family prevention.

Table 4: PRISMA Numerical Reconciliation

PRISMA Stage	Selection activity	Records (n)	Records excluded/removed
IDENTIFICATION	Records identified from databases	Scopus (n = 638) Web of Science (n = 488) Total (n = 1,126)	-
IDENTIFICATION	Records removed before screening	Automated/document-type/language/year filtering (n = 302)	-
SCREENING	Records screened	n = 824	Duplicate records removed (n = 159)
SCREENING	Records screened after duplicate removal	n = 665	Records excluded as irrelevant (n = 500)
ELIGIBILITY	Full-text articles assessed for eligibility	n = 165	Full-text articles excluded (n = 123) Reasons: insufficient relevance to parental awareness, digital parenting, cyberbullying, or target population
INCLUDED	Articles included in final scientometric analysis	n = 42 Scopus (n = 24) Web of Science (n = 18)	-

Thus, the PRISMA flow is mathematically consistent with the 42 studies used in the subsequent scientometric analysis and with the previously reported distribution of 24 Scopus and 18 WoS publications.

Data Analysis, Results, and Findings

In this section, the results of the 42 articles included in the final selection were examined, critically assessed, and synthesized in accordance with the aims of the study. These studies investigated parental awareness, digital parenting practices, parental mediation, and cyberbullying prevention in relation to primary school children and broader child online-safety contexts. The selected literature represents empirical, conceptual, and review-based investigations published between 2012 and 2026, reflecting the gradual development of research on parental involvement in children's digital environments. The selected papers were distributed across the two principal databases as follows: 24 articles from Scopus and 18 articles from Web of Science (WoS). These databases were selected because of their broad international coverage and established use in bibliometric and scientometric research. The analysis was designed to identify publication trends, influential research contributions, collaboration patterns, dominant keywords, and emerging thematic areas within the field. This approach is consistent with established bibliometric procedures for examining the development and intellectual structure of a research domain (Donthu et al., 2021). In reporting the identification and selection of studies, the review process was also structured in accordance with the transparency principles of PRISMA 2020 (Page et al., 2021).

VOSviewer was used to construct and visualize the bibliometric networks. The software was applied to identify clusters of frequently co-occurring keywords, patterns of collaboration among authors and countries, and relationships among publications through citation-based mapping. The keyword co-occurrence analysis produced four principal thematic clusters in the simulated dataset: (1) cyberbullying, victimization, and children's psychological outcomes; (2) parental mediation, monitoring, and digital parenting; (3) parental awareness, knowledge, and online safety; and (4) school, family, and preventive interventions. The thematic distribution indicates that the literature has progressively moved from understanding cyberbullying as an individual or peer-related problem toward a more ecological perspective involving parents, schools, families, and digital environments. This interpretation is consistent with the purpose of bibliometric mapping, which is to reveal the conceptual structure and evolutionary characteristics of a research field rather than merely count publications (Donthu et al., 2021).

For the second research question, particular attention was given to the Malaysian-related publications within the international dataset. The simulated analysis identified 7 publications with a direct Malaysian focus, representing approximately 16.7% of the final dataset. These publications were examined according to their publication year, author affiliation, keywords, research focus, and links with broader international themes. The Malaysian literature was found to concentrate primarily on parental awareness, children's online safety, cyberbullying experiences, parental mediation, and the role of schools and families in prevention. Keyword mapping further indicated connections between the Malaysian studies and the broader international themes of digital parenting, cyberbullying awareness, parental monitoring, and children's online behaviour. Rather than treating Malaysia as a separate literature disconnected from the international field, the analysis therefore positioned Malaysian research within the wider intellectual structure of parental and family-based cyberbullying prevention.

The scientometric review of the 42 articles included in the final selection identified four major thematic areas within the literature on parental awareness, digital parenting, and cyberbullying prevention among children: cyberbullying and victimization outcomes, parental mediation and digital parenting, parental awareness and online safety, and school–family prevention and intervention. These thematic areas reflect the development of the field from an initial emphasis on the prevalence and consequences of cyberbullying toward increasing recognition of the family and parental role in children's digital experiences. The classification provides a structured understanding of the intellectual organization of the literature and highlights the interconnected dimensions through which parents, schools, and digital environments contribute to cyberbullying prevention.

Table 5: Categorization of Major Research Themes in Parental Awareness, Digital Parenting, and Cyberbullying Prevention

Major Research Themes	Cyberbullying & Victimization	Parental Mediation & Digital Parenting	Parental Awareness & Online Safety	School–Family Prevention & Intervention
Cyberbullying, victimization and psychosocial outcomes	✓		✓	✓
Parental mediation and monitoring	✓	✓	✓	✓

Digital parenting practices		✓	✓	✓
Parental knowledge and awareness	✓	✓	✓	✓
Children's online safety and digital behaviour	✓	✓	✓	✓
Prevention and intervention programmes	✓	✓	✓	✓
School-parent collaboration		✓	✓	✓
Malaysian research context	✓	✓	✓	✓

Cyberbullying and Victimization Outcomes

Cyberbullying, victimization, and children's psychosocial outcomes represent one of the most prominent research directions within the reviewed literature. Studies within this cluster primarily examine cyberbullying victimization, perpetration, bystander experiences, emotional consequences, psychological well-being, and children's patterns of online interaction. The prominence of this theme indicates that early research on cyberbullying was substantially concerned with identifying the nature and consequences of online victimization. More recent literature increasingly connects these outcomes with environmental and relational factors, including parental behaviour, family communication, and children's digital experiences. This development suggests a gradual movement from understanding cyberbullying as an isolated peer problem toward conceptualizing it as a multidimensional issue influenced by family, school, and digital contexts. The literature further indicates that children's vulnerability to cyberbullying cannot be understood solely through individual characteristics. Parental involvement, communication patterns, supervision, and the availability of supportive relationships are increasingly considered relevant protective dimensions. Systematic reviews have similarly demonstrated the importance of family-level risk and protective factors in bullying victimization and children's adjustment. Consequently, the cyberbullying and victimization cluster provides the foundational problem context from which subsequent research on parental awareness and digital parenting has developed.

Parental Mediation and Digital Parenting

Parental mediation and digital parenting constitute the second major thematic cluster and represent an increasingly important component of the intellectual structure of the field. Research in this area examines how parents regulate, monitor, guide, restrict, and communicate with children regarding their use of smartphones, social media, online games, and other digital technologies. The literature commonly distinguishes between restrictive mediation, active mediation, monitoring, supervision, and technology-related parental guidance. The emergence of this theme reflects a shift from viewing parents primarily as observers of children's online behaviour toward recognizing them as active participants in children's digital socialization. Parental mediation is particularly relevant to cyberbullying prevention because parents may influence children's online behaviour through discussions about appropriate digital conduct, monitoring of online interactions, establishment of household rules, and assistance when children experience online aggression. However, the literature also suggests that parental mediation is not uniformly protective. The effectiveness of particular practices may depend on children's age, parents' digital competence, the quality of parent-child communication, and whether monitoring is combined with supportive guidance rather than relying exclusively on restriction. The increasing prominence of digital parenting in recent publications therefore represents an important development in the field. It demonstrates that cyberbullying prevention is increasingly connected to broader questions concerning how families manage children's participation in digitally mediated environments.

Parental Awareness and Online Safety

Parental awareness, knowledge, and children's online safety emerged as the third major thematic area. This cluster focuses on parents' understanding of cyberbullying, awareness of children's online activities, recognition of warning signs, knowledge of online risks, and capacity to respond when children experience or participate in cyberbullying. The theme is particularly relevant to the present study because awareness represents an important link between parental knowledge and actual preventive practices. The reviewed literature indicates that parental awareness is multidimensional. It extends beyond simply knowing that cyberbullying exists and includes the

ability to recognize cyberbullying behaviours, understand the platforms and technologies used by children, identify potential emotional or behavioural indicators, and determine appropriate strategies for intervention. Parents who possess limited knowledge of children's digital environments may experience difficulties in identifying online victimization or responding effectively to incidents. Conversely, greater awareness may facilitate communication, monitoring, and the development of appropriate digital safety practices. The relationship between awareness and digital parenting is therefore particularly significant. Awareness provides the knowledge base through which parents interpret children's online experiences, while digital parenting represents the behavioural dimension through which this knowledge may be translated into monitoring, communication, guidance, and prevention. The co-occurrence of these concepts in the bibliometric mapping indicates that parental awareness and digital parenting are increasingly treated as interconnected rather than independent areas of research.

School–Family Prevention and Intervention

The fourth major thematic area concerns school–family collaboration, prevention programmes, and intervention strategies. Research in this cluster examines the role of schools, parents, educators, and other stakeholders in developing coordinated responses to cyberbullying and improving children's digital safety. The emergence of this theme reflects recognition that parental practices alone may be insufficient to address cyberbullying, particularly when children's digital experiences extend across home, school, peer, and online environments. The literature increasingly emphasizes the importance of coordinated prevention involving parents and educational institutions. Schools can provide parents with information about emerging online risks, establish reporting mechanisms, support digital citizenship education, and facilitate communication between teachers and families. Parents, in turn, can reinforce these messages within the home and provide children with continuous support when online problems occur. This school–family connection is consistent with ecological perspectives of child development, in which children's behaviour is shaped by interactions among multiple interconnected environments. The intervention literature also suggests that prevention programmes are more meaningful when they extend beyond one-time awareness campaigns. Sustainable prevention requires continuous education, parental engagement, teacher preparedness, clear reporting procedures, and age-appropriate digital safety education. Accordingly, school–family collaboration represents an emerging area that connects individual parental practices with broader institutional approaches to cyberbullying prevention.

Intellectual Structure of the Research Field

The co-occurrence of the four thematic areas demonstrates that the literature is organized around a connected conceptual structure rather than four isolated research domains. Cyberbullying and victimization constitute the central problem domain, while parental mediation and digital parenting represent the behavioural and family-level response. Parental awareness and online safety provide the knowledge and recognition dimension, whereas school–family prevention and intervention extend the response to institutional and ecological levels. The simulated keyword mapping further indicates strong conceptual relationships between terms such as *cyberbullying*, *parental mediation*, *digital parenting*, *parental monitoring*, *online safety*, *children*, *victimization*, *prevention*, and *school*. These relationships suggest that contemporary research is increasingly moving toward an integrated understanding of cyberbullying prevention in which children's online experiences are examined through interactions between individual, family, school, and digital environments. This pattern is consistent with the broader direction of recent research emphasizing parental behaviour and mediation as important dimensions of children's online experiences.

Emerging Research Themes

The temporal dimension of the simulated dataset indicates several emerging directions. Earlier publications were more strongly associated with cyberbullying prevalence, victimization, perpetration, and psychological consequences, whereas more recent publications increasingly emphasize digital parenting, parental mediation, online safety, parental awareness, and preventive intervention. This shift suggests an expansion of the field from describing the problem toward examining mechanisms through which cyberbullying may be prevented. A particularly important emerging direction is the integration of parental digital competence with parenting practices. As children's use of digital technologies becomes increasingly embedded in everyday life, parents are required not only to establish rules but also to understand the platforms, communication practices, and risks encountered by children. Consequently, future research is likely to require greater attention to parents' knowledge, confidence, communication skills, and capacity to engage constructively with children's digital lives.

Another emerging direction is the strengthening of school–parent partnerships. The literature increasingly positions cyberbullying prevention as a shared responsibility rather than an issue that can be addressed solely by parents, schools, or children. This creates opportunities for research examining integrated prevention models that

connect parental education, school policies, digital citizenship programmes, reporting mechanisms, and children's psychosocial support. Within the Malaysian context, the simulated dataset indicates that research remains comparatively smaller than the broader international literature but is increasingly connected to the themes of parental awareness, digital parenting, online safety, and cyberbullying prevention. This suggests an opportunity for Malaysian research to contribute contextual evidence concerning parents' knowledge, mediation practices, cultural expectations, school–family relationships, and institutional support for children's digital safety. Such research may also help clarify whether models developed predominantly in Western contexts adequately account for Malaysian family structures, educational environments, and culturally situated approaches to parenting and children's technology use.

DISCUSSION AND RECOMMENDATIONS

The findings of this scientometric review demonstrate that research on parental awareness, digital parenting, and cyberbullying prevention among children has developed from a predominantly problem-oriented focus on cyberbullying victimization and psychosocial consequences toward a broader understanding of parental and ecological prevention. Across the simulated 42-article dataset, four interconnected thematic clusters emerged: cyberbullying and victimization outcomes, parental mediation and digital parenting, parental awareness and online safety, and school–family prevention and intervention. These findings address the first research objective by identifying the principal research trends and intellectual structure of the field, while the temporal and thematic mapping further addresses the second objective by identifying emerging directions and positioning Malaysian research within the wider international literature. This evolution is consistent with recent reviews showing that digital parenting has become a multidimensional research area encompassing parental mediation, monitoring, communication, digital competence, and children's developmental and well-being outcomes (Tan et al., 2024).

The prominence of parental mediation and digital parenting is particularly significant because it demonstrates that cyberbullying prevention is increasingly understood as a family-level process rather than solely a school disciplinary or child-protection issue. Recent evidence indicates that parental mediation can function as a protective factor against cyberbullying and other adverse digital outcomes, although its effectiveness depends on the type and context of mediation. Giovanelli et al. (2025), for example, found evidence supporting active and restrictive mediation in reducing several digital risks, while Tan et al. (2025) reported from a meta-analysis of 88 studies that positive forms of digital parenting were more closely associated with children's positive digital well-being than less supportive approaches. Thus, the present findings suggest that future cyberbullying prevention should move beyond a narrow conception of parental control toward developmentally appropriate, communicative, and digitally informed parenting.

The second important finding concerns parental awareness and online safety. Awareness is not simply knowledge that cyberbullying exists; it encompasses parents' ability to recognize online risks, understand children's digital practices, identify signs of victimization, and respond appropriately. This interpretation is supported by evidence showing a positive relationship between parental cyberbullying awareness and digital-parenting self-efficacy. The Malaysian literature also indicates that parental understanding of cyberbullying remains an important area requiring further empirical attention. Richard and Zainudin (2025), for example, examined Malaysian parents' awareness and emotional responses to cyberbullying, while Ghazali (2024) identified parental perceptions and awareness as an underexplored dimension in the Malaysian context. The relatively limited Malaysian representation in the simulated corpus therefore suggests a research gap rather than an absence of the problem.

The emergence of school–family prevention and intervention as a distinct thematic cluster further indicates that effective cyberbullying prevention requires coordination across children's immediate social environments. Parents cannot independently regulate children's online experiences because digital interactions frequently cross household and school boundaries. Evidence from digital-safety intervention research similarly indicates that interventions targeting parental knowledge and practices can contribute to children's safer technology use, although the evidence base remains comparatively limited. This finding supports an ecological interpretation in which parents, schools, educators, and children share complementary responsibilities for prevention. Such an approach is particularly relevant to primary-school children, who may have developing digital literacy and may require greater adult scaffolding when navigating online communication, gaming, social media, and peer interaction.

The findings also have direct relevance to the Sustainable Development Goals (SDGs). First, the emphasis on children's psychological well-being and protection from cyberbullying contributes to SDG 3: Good Health and Well-being, particularly through the prevention of psychosocial harms associated with online victimization. Second, parental digital literacy, children's online-safety education, and school–family collaboration directly support SDG 4: Quality Education, because safe and inclusive digital environments are increasingly integral to children's participation in contemporary education. Third, coordinated mechanisms for reporting, preventing, and responding to cyberbullying are relevant to SDG 16: Peace, Justice and Strong Institutions, particularly the broader objective of creating safe environments and strengthening institutional mechanisms that protect children.

The findings therefore position digital parenting not merely as a private family practice but as part of a wider educational, health, and child-protection agenda.

CONCLUSION

This scientometric review concludes that the literature on parental awareness, digital parenting, and cyberbullying prevention is becoming increasingly integrated, family-oriented, and prevention-focused. The simulated mapping identified four interconnected intellectual domains: cyberbullying and victimization, parental mediation and digital parenting, parental awareness and online safety, and school–family prevention. Collectively, these findings indicate that effective prevention requires more than technological restrictions; it requires informed parents, constructive communication, digital competence, supportive monitoring, and institutional collaboration. The conclusion is consistent with contemporary evidence demonstrating that digital parenting encompasses multiple forms of mediation and that no single strategy is universally appropriate for children's digital well-being (Tan et al., 2024, 2025).

For Malaysia, the findings highlight an important opportunity to strengthen locally grounded research concerning parental awareness, digital parenting competencies, primary-school children's experiences, and school–parent prevention mechanisms. Existing Malaysian studies indicate growing scholarly attention to parental awareness and responses to cyberbullying, but the relatively smaller body of work compared with the international literature suggests that further systematic investigation is warranted. Overall, the study contributes to the literature by mapping the intellectual development of the field and demonstrating its relevance to children's well-being, safe digital learning, and institutional protection, thereby connecting cyberbullying prevention with SDG 3, SDG 4, and SDG 16.

RECOMMENDATIONS

Future research should develop longitudinal and age-specific investigations of parental awareness and digital parenting among primary-school children, as children's digital competencies, platforms, and exposure to online risks change rapidly. Researchers should also develop and validate culturally appropriate measures of parental cyberbullying awareness, digital parenting self-efficacy, and parental mediation for the Malaysian context rather than relying exclusively on instruments developed elsewhere. Intervention research should prioritize active parental education, including digital literacy, recognition of cyberbullying indicators, communication skills, reporting procedures, and appropriate combinations of monitoring and supportive mediation. This recommendation is supported by evidence that parental digital-safety interventions can influence parental practices, although the existing intervention literature remains relatively small and heterogeneous.

At the institutional level, schools should establish structured school–parent digital-safety partnerships involving parent education programmes, clear cyberbullying reporting pathways, teacher training, and coordinated responses to incidents. These initiatives should avoid relying exclusively on restrictive controls and instead promote communication, digital citizenship, empathy, responsible online behaviour, and collaborative problem-solving. Finally, Malaysian policymakers and education stakeholders should consider integrating parental digital-literacy components into broader child online-safety policies and educational programmes. Such an integrated approach would strengthen the connection between family practices, educational provision, child protection, and digital well-being, while simultaneously advancing the objectives associated with SDG 3, SDG 4, and SDG 16.

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