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# Screen-Based Emotion Regulation in Early Childhood Parenting: A Systematic Literature Review and Bibliometric Analysis

Zulfa Khairati<sup>1</sup>, Agustan<sup>2</sup>, Hikmatur Rahmah<sup>2</sup>, Hildawati<sup>2</sup>, Muammar Qadafi<sup>3</sup>

<sup>1</sup>Universitas Islam Negeri Sunan Kalijaga, Yogyakarta, Indonesia, <sup>2</sup>Universitas Islam Negeri Datokarama, Palu, Indonesia, <sup>3</sup>University of Southern Queensland, Australia

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Digital pacifier, Digital parenting, Technoference, Early childhood, Systematic literature review.

## Correspondence to

Zulfa Khairati, Universitas Islam Negeri Sunan Kalijaga, Yogyakarta, Indonesia,  
**e-mail:**  
[zulfakhrti@gmail.com](mailto:zulfakhrti@gmail.com)

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## Abstract

Mobile devices are increasingly used to calm, distract, or manage young children, a practice described as the digital pacifier. Although widely discussed in digital parenting research, the phenomenon remains diffuse because it is approached through adjacent constructs rather than through a clearly defined framework. This study examined how the digital pacifier is represented across the literature and whether it is better understood as an isolated parenting tactic or as part of a broader relational process. A two-stage review design combined bibliometric mapping with a systematic literature review. Bibliometric analysis used Scopus-indexed records, followed by a PRISMA-guided review of studies from Scopus, ScienceDirect, and Google Scholar, resulting in a final corpus of 25 studies. The findings show that the literature is growing but remains fragmented. Across the reviewed studies, a pattern links reactive, stress-related device use to parental strain, technoference, and less favorable developmental conditions, especially when device use weakens responsiveness and interrupts co-regulatory interaction. The evidence does not support a uniform risk narrative, because outcomes vary by child characteristics, device type, context of use, and parental mediation. The review therefore argues that the digital pacifier is better understood as a relational and context-sensitive process rather than as a simple screen-time problem. Its main contribution lies in clarifying this pattern through the interpretive framework of the Digital Pacifier Cycle while also showing that the model remains provisional and requires further testing across settings. The study offers a more integrated basis for research and interventions that address not only screen use itself, but also the structural and relational pressures shaping contemporary parenting.

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## Introduction

Digital technology has become deeply woven into contemporary family life, reshaping how parents seek information, organize routines, and respond to children's everyday needs. Mobile devices no longer function merely as tools for communication. They increasingly mediate caregiving, learning support, and behavior management, making technologically assisted parenting part of ordinary domestic life rather than an exceptional practice (Chirca et al., 2019; Davletshina & Voyer, 2025; Kurt, 2023). This shift has expanded parental options, yet it has also raised sharper concerns about early childhood development, especially during the preschool years, when children still depend heavily on direct interaction, co-regulation, play, and embodied social experience.

One increasingly visible expression of this transformation is the phenomenon often referred to as the *digital pacifier*. The term captures the use of smartphones or tablets to calm, distract, or occupy young children during moments of distress, boredom, or parental overload. In everyday parenting practice, such devices may serve as temporary babysitters, behavioral regulators, background companions, or even educational tools, particularly when parents are navigating time pressure and competing responsibilities (Bar Lev et al., 2024; Mustikasari et al.,

2025). Their attraction is easy to understand: they are immediate, portable, and effective in the short term. What remains far less clear is what happens when this short-term solution begins to replace relational forms of soothing, guidance, and shared regulation.

Scholarship on this issue remains divided. A substantial body of research warns that using digital devices to manage children's emotions may reduce the quality of parent-child interaction and weaken the interpersonal conditions through which children develop emotional regulation, language, and self-control (Linebarger, 2015; Radesky et al., 2016). Other studies link prolonged or weakly mediated screen exposure to socio-emotional difficulties and to the displacement of activities that support motor and regulatory development (Jia et al., 2025; Martzog & Suggate, 2022). At the same time, a more optimistic line of research shows that digital media can support learning and engagement when its use is intentional, developmentally appropriate, and accompanied by active parental mediation or co-use (Griffith et al., 2022; Flaibam Giovanelli et al., 2025). The central issue, then, is not whether screens are inherently beneficial or harmful. It is how, when, and under what conditions digital devices become integrated into the emotional ecology of parenting.

This is precisely where the literature remains conceptually thin. Existing reviews have mapped the broad terrain of digital parenting, including mediation practices, technology use, and parental role modeling, but they have not adequately theorized the digital pacifier as a distinct mechanism within early childhood parenting (Tan et al., 2024). Much of the empirical work also remains fragmented. Parenting stress, media use, technofence, and developmental outcomes are often examined as separate variables or parallel concerns rather than as interrelated elements of an ongoing process. The empirical record, moreover, is not fully consistent. Some studies report mixed or context-dependent associations between screen use and child behavior, while others show that age, device type, and conditions of use significantly shape developmental effects (Mallawaarachchi et al., 2025; Jia et al., 2025). What is still missing is a stronger explanation of how parenting stress may prompt reactive device use, how that use may intensify technofence in parent-child interaction, and how these dynamics may ultimately reproduce the very difficulties they were meant to contain.

Reducing this issue to parental choice alone is therefore analytically inadequate. Emerging evidence suggests that digital pacifier use is often shaped by broader socio-ecological pressures, including economic strain, work-family conflict, limited childcare support, and uneven access to developmentally appropriate alternatives. Economic stress, for instance, has been associated with higher and less interactive forms of infant media exposure, while scholarship on the Global South cautions against techno-optimistic narratives that overlook structural inequality and the digital divide (Qiu, 2025; Zanzoul et al., 2024). Evidence from Indonesia points in a similar direction, showing that digital parenting among urban millennial parents is closely tied to work pressure, family expectations, and practical constraints in everyday caregiving (Mustikasari et al., 2025). Seen from this angle, the digital pacifier is not simply a behavioral tactic. It is a situated response, formed within wider structural and cultural conditions that shape both its appeal and its consequences.

To examine this problem more coherently, the present study draws on an integrated conceptual lens. Parental Mediation Theory helps distinguish reactive device use from more intentional and developmentally guided forms of media engagement. Emotion regulation and technofence perspectives clarify how parental stress and device-mediated interruption may disrupt co-regulatory interaction in everyday caregiving. Ecological Systems Theory situates these processes within wider contextual forces, including economic pressure, social support, and cultural expectations surrounding parenting and child behavior. The displacement hypothesis also remains relevant, particularly in explaining how screen-based occupation may crowd out physical, relational, and exploratory activities that are central to early development (Martzog & Suggate, 2022).

Against this backdrop, the present study moves beyond the familiar binary that treats the digital pacifier as either a practical solution or a developmental threat. Using a systematic

literature review combined with bibliometric analysis, it synthesizes the literature to clarify how stress-driven device use, parental mediation, technofence, and child developmental outcomes are connected within contemporary parenting environments. More specifically, the study makes three contributions. First, it advances an interpretive account of digital pacifier use as a potentially cyclical process rather than an isolated parenting practice. Second, it sharpens the distinction between reactive and proactive forms of digital mediation in parenting. Third, it situates the phenomenon within the broader socio-economic and cultural conditions that shape both its meaning and its consequences. In this way, the study extends existing review-based scholarship by moving from descriptive mapping toward a more integrated explanation of digital parenting in early childhood (Tan et al., 2024; Flaibam Giovanelli et al., 2025).

## Methods

### Research Design

This study employs a systematic literature review (SLR) approach, understood as a systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing relevant research. In this study, the review was organized as a two-stage design that combined bibliometric mapping with a systematic literature review. The first stage mapped the structure and development of scholarship on digital parenting and screen-based child management. The second stage synthesized the substantive findings of the reviewed literature and informed the construction of the interpretive model proposed in this article. This design was used because the literature on digital pacifier use remains dispersed across adjacent conversations on screen exposure, digital parenting, parental mediation, technofence, and early childhood development.

### Data sources and search strategy

The bibliometric stage drew exclusively on the Scopus database and was conducted in December 2025 using Biblioshiny in the Bibliometrix R package. Scopus was selected because of its broad coverage of peer-reviewed literature across the social sciences, psychology, education, and health-related fields. The search string used for bibliometric mapping was as follows: ("digital pacifier" OR "screen time" OR "digital device" OR "technology") AND ("parenting" OR "parent" OR "caregiver" OR "child-rearing") AND ("young children" OR "infant" OR "toddler" OR "preschool" OR "child"). This search returned 3,660 records.

The systematic review stage was conducted in December 2025 and expanded the search across Scopus, ScienceDirect, and Google Scholar in order to capture broader coverage of the field. For Google Scholar, the first 200 relevance-ranked records were screened, following common review practice for handling the platform's high retrieval volume. The search syntax was adapted where necessary to fit database requirements while preserving the same conceptual clusters: digital technology, parenting roles, and early childhood populations. Across the three databases, the search yielded 3,811 records before screening (Scopus = 3,660; ScienceDirect = 89; Google Scholar = 62).

### Eligibility criteria

To maintain conceptual breadth while preserving analytic focus, the review included studies that addressed digital device use in parenting contexts involving young children from infancy to preschool age. Studies were retained when they examined device use in relation to emotion regulation, behavior management, parent-child interaction, parental mediation, or technofence. Because this field is still methodologically and conceptually emergent, the final corpus included both primary empirical studies and high-relevance review-based syntheses when these directly informed the interpretation of digital pacifier use. The inclusion and exclusion criteria applied in the review are summarized in Table 1.

Table 1. Eligibility criteria used in the systematic review

Criterion	Inclusion	Exclusion
Publication type	Peer-reviewed empirical studies; meta-analyses; systematic, umbrella, or review-based syntheses directly relevant to the topic	Editorials, opinion pieces, book reviews, conference abstracts without sufficient data, and unrelated conceptual commentary
Population	Young children from infancy to preschool age, including parenting or caregiver contexts	Studies focused only on adolescents, older children, or adults
Topical focus	Digital device use in parenting contexts, especially emotion regulation, behavior management, parent-child interaction, technofence, or parental mediation	Studies unrelated to parenting use of digital devices or unrelated to early childhood
Publication period	2020-2025 for full-text review and synthesis	Publications before 2020
Language and access	English-language studies with accessible full text	Non-English studies or full texts that could not be retrieved

### Study selection and screening

All retrieved records were exported to Mendeley for reference management and duplicate removal. Of the 3,811 records identified, 391 duplicates were removed, leaving 3,420 unique records for title and abstract screening. Screening was conducted independently by two reviewers against the eligibility criteria. At this stage, 3,345 records were excluded for the following reasons: publication type not suitable for review purposes ( $n = 890$ ), outside the target age range ( $n = 756$ ), published before 2020 ( $n = 1,311$ ), or unindexed/non-peer-reviewed status ( $n = 388$ ). The remaining 75 articles proceeded to full-text assessment.

Full-text screening was also conducted independently by two reviewers, with disagreements resolved through discussion. Fifty articles were excluded at this stage because they were topically irrelevant ( $n = 18$ ), unavailable in full text ( $n = 17$ ), or lacked sufficient methodological detail or analytic relevance ( $n = 15$ ). The final review corpus consisted of 25 studies. The full screening pathway, from identification to final inclusion, is presented in Figure 1.

### Quality appraisal and data extraction

Methodological quality was assessed in a design-sensitive manner. Primary empirical studies were appraised using the appropriate Joanna Briggs Institute (JBI) critical appraisal checklists according to study type. Meta-analyses and systematic or umbrella reviews were assessed using AMSTAR-2. Review-based and theoretical papers retained for conceptual interpretation were not used as equivalent evidence to primary studies; instead, they were assessed for relevance, scope, and contribution to the conceptual development of the review. Appraisal was conducted independently by two reviewers, and disagreements were resolved through discussion.

For each included study, the following information was extracted: author, year, study design, population or sample, substantive focus, and principal findings. This extraction process supported both descriptive mapping and thematic comparison across the included literature.

### Data synthesis

The final corpus was synthesized using thematic synthesis following Thomas and Harden (2008). Findings were coded line by line, grouped into descriptive themes, and then developed into higher-order analytical themes. These themes were interpreted through the integrated conceptual lens used in this study, particularly Parental Mediation Theory, emotion regulation, and technofence perspectives. The bibliometric mapping and thematic synthesis were then read together to support the construction of the proposed Digital Pacifier Cycle as an interpretive model rather than as a causal claim established by a single empirical study.

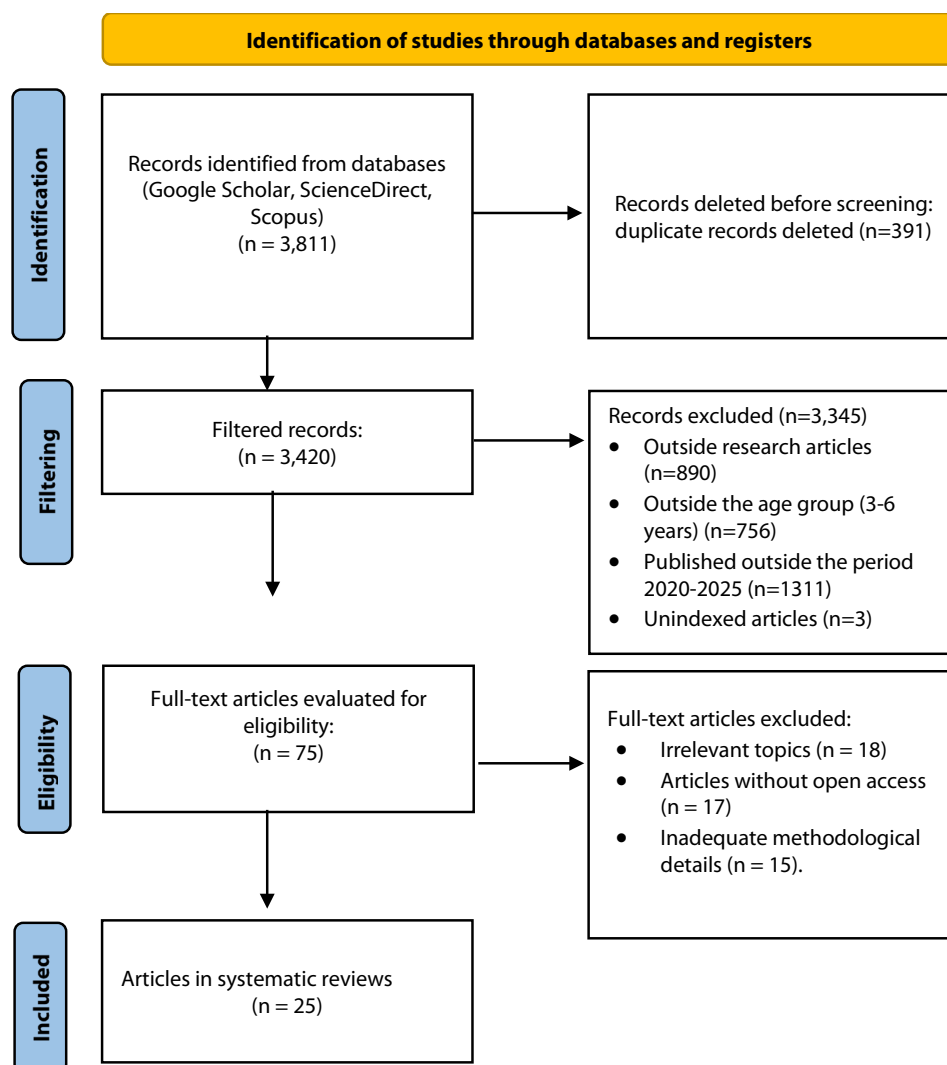


Figure 1. PRISMA Flow Diagram for Article Selection

## Result

### Bibliometric findings

The bibliometric analysis was used to position the digital pacifier literature within the broader field of digital parenting and early childhood research. Rather than revealing an already consolidated niche, the map indicates that research on this topic remains distributed across adjacent conversations on parenting, child development, digital media use, and family well-being. This pattern is important because it suggests that the digital pacifier is not yet treated as a stable standalone construct in the literature, but is instead approached through overlapping concerns about screen exposure, caregiver practice, and developmental outcomes.

Keyword co-occurrence analysis identified several thematic clusters that structure the field. One cluster is anchored in family actors and caregiving contexts, reflected in recurrent terms such as *child*, *parents*, *caregivers*, and *family*. A second cluster groups developmental and psychological concepts, including *child development*, *psychology*, and *parenting*. Additional clusters connect digital use to health- and behavior-related concerns through terms such as *screen time*, *mental health*, and *physical activity*. A distinct COVID-19 or pandemic-related cluster also appears, indicating that part of the recent growth of the field has been shaped by a temporally specific context in which parental burden, digital reliance, and child media exposure intensified.



pacifier itself. This bibliometric pattern provides the backdrop for the systematic review, which was used to identify how the phenomenon is actually described, explained, and evidenced across the included studies.

### Characteristics of the included studies

After the screening process, 25 studies were retained for analysis. The final corpus was methodologically heterogeneous, including longitudinal observational studies, cross-sectional surveys, experiments, psychometric studies, systematic reviews, meta-analyses, umbrella reviews, and theoretical or review-based contributions. This heterogeneity matters because the literature does not offer one uniform type of evidence. Instead, it combines primary studies that document behavioral patterns, review-based syntheses that consolidate broader tendencies, and conceptual works that clarify how parenting and digital mediation are being framed.

Across the corpus, observational and review-based designs were more common than intervention studies. Longitudinal and mediation-oriented studies contributed much of the stronger evidence on reciprocal or stress-linked processes, while experiments and intervention studies were relatively few and tended to focus on alternatives that support self-regulation rather than on the digital pacifier directly. The included studies also varied in thematic emphasis. Some examined device use as part of everyday parenting routines, others focused on parenting stress, technofence, game addiction, problematic media use, or the developmental appropriateness of children's digital content. The distribution of study characteristics and principal findings is summarized in Table 2.

Table 2. Data extraction matrix of the included studies

No.	Author(s)	Research design	Main focus	Principal finding
1	Bar Lev et al. (2024)	Longitudinal qualitative	Media use in parenting routines	Digital devices function as background noise, babysitters, pacifiers, and educational aids in daily parenting routines.
2	Brauchli et al. (2024)	Longitudinal observational	Parenting stress, parental attitudes, and child screen time	Higher parenting stress is associated with longer child screen time, and positive parental attitudes toward media strengthen this association.
3	Türen and Kahraman (2024)	Quantitative survey	Game addiction tendencies and maternal digital awareness	Maternal digital awareness, especially digital neglect, predicts preschool children's tendency toward digital game addiction.
4	Mustikasari et al. (2025)	Qualitative case study	Mobile touch screen device use among urban millennial parents	Devices are used as educational tools and behavior regulators, with work pressure and time constraints as major drivers.
5	Burhan et al. (2024)	Observational survey	Parenting strategies in the digital era	Parents tend to apply restrictive mediation by limiting content and monitoring children's digital activities.
6	Crescenzi-Lanna (2022)	Narrative review with empirical testing	Developmental appropriateness of children's apps	Commercial age ratings are often inaccurate, while developmental appropriateness is positively related to children's enjoyment and use.

No.	Author(s)	Research design	Main focus	Principal finding
7	Mallawaarachchi et al. (2025)	Longitudinal observational	Types and contexts of screen use and child behavior	Associations between screen-use type and behavior are not uniform, although some use patterns are linked to higher externalizing behavior.
8	Jia et al. (2025)	Meta-analysis	Screen exposure and social-emotional development	Screen exposure is negatively associated with social-emotional competence and positively associated with problem behaviors, with age and device type acting as moderators.
9	Martzog and Suggate (2022)	Longitudinal cross-lagged	Media use and fine motor development	New media use predicts lower fine motor skills one year later, while stronger fine motor skills predict lower later media use.
10	Li et al. (2023)	Online survey	Maternal distress during the pandemic and problematic media use	Maternal distress increases children's problematic media use through parenting stress and instrumental media use; co-parenting support moderates this pathway.
11	Zanzoul et al. (2024)	Linear and logistic regression	Economic stress and infant media exposure in Latino families	Economic stress, more than general parenting stress, is associated with higher and less interactive infant media exposure.
12	McDaniel and Radesky (2020)	Longitudinal observational	Child externalizing behavior, parenting stress, and media use	Difficult child behavior increases parental stress, which in turn predicts greater child media use.
13	Liang and Van Leeuwen (2024)	Exploratory and confirmatory factor analysis	Parenting practices via mobile phone	Six dimensions of mobile-phone-based parenting practices are validated, including responsiveness, autonomy support, and multiple forms of control.
14	Yıldız et al. (2025)	Online survey with serial mediation	Technoference and children's self-regulatory skills	Low child effortful control, higher maternal stress, problematic maternal smartphone use, and technoference form a linked pathway associated with weaker child self-regulation.
15	Friedmann et al. (2025)	Comparative observational	Infant social development before and during the pandemic	Infant social development was lower during the pandemic, with increased maternal media use partially mediating this decline.
16	Kaya et al. (2025)	Latent profile analysis	Game addiction, socio-emotional well-being, and resilience	High digital game addiction does not uniformly correspond to low well-

No.	Author(s)	Research design	Main focus	Principal finding
				being, indicating differentiated child profiles.
17	Wartberg et al. (2024)	Exploratory and confirmatory factor analysis	Screening instrument for increased digital media use	The IDMUQ is a valid short screening tool for increased digital media use in preschool children, and higher scores are associated with psychosocial problems.
18	Qiu (2025)	Systematic review	Techno-optimism and the digital divide in the Global South	Technological optimism often ignores structural inequality and uneven conditions of access and use.
19	Williams et al. (2023)	Experimental intervention	Rhythm and movement for self-regulation	An eight-week rhythm and movement program improves self-regulation in preschoolers, particularly those from low-income backgrounds.
20	Tabei et al. (2025)	Pre-post experimental study	Laughter yoga and separation anxiety	Laughter yoga reduces separation anxiety symptoms and supports internal coping strategies in kindergarten children.
21	Laktyukhina (2020)	Theoretical review	Digitalization of intimacy and digital parenting	Digital parenting can be read as a reconfiguration of intimacy, surveillance, and power in parent-child relations.
22	Gordon-Hacker and Gueron-Sela (2020)	Longitudinal quantitative	Media use to soothe children and emotional development	Using media to regulate child distress can predict increased negative emotionality over time in some children.
23	Mikic and Klein (2022)	Systematic review	Parental smartphone use in the presence of young children	Parental device use reduces sensitivity and responsiveness, and technofence disrupts children's learning and regulation.
24	Chirca et al. (2019)	Descriptive quantitative survey	Use of digital resources in modern parenting	Parents report high internet use for parenting-related activities, particularly for information seeking and online learning.
25	Tan et al. (2024)	Umbrella review	Conceptualization, predictors, outcomes, and interventions in digital parenting research	Digital parenting research centers on mediation, technology use, and parental role modeling, but remains methodologically uneven.

Table 2 shows that the evidence base is broad but uneven. Stronger process-oriented evidence comes mainly from longitudinal, mediation, and meta-analytic studies, whereas some claims about beneficial or constructive uses of technology rest on more context-bound or review-based evidence. The table also makes clear that the literature does not describe a single homogeneous practice. What is grouped here under the digital pacifier phenomenon

encompasses routine soothing, instrumental device use, parental smartphone distraction, problematic media exposure, and broader forms of digital mediation in caregiving.

Methodological quality across the included studies was predominantly moderate to high, especially among longitudinal, psychometric, and meta-analytic studies with clearer sampling procedures, measurement strategies, and analytic reporting. By contrast, several cross-sectional and survey-based studies relied heavily on self-report data and offered more limited control of confounding variables. A smaller subset of studies also showed narrower methodological scope, including limited samples or weaker bias management. The evidence base is therefore credible but not uniform in evidential strength.

### **Thematic synthesis of the reviewed studies**

The thematic synthesis produced four recurrent patterns across the corpus. These patterns did not emerge as isolated themes but as interconnected strands in the literature. Some studies addressed one strand more directly than another, yet the overall pattern consistently linked parental strain, forms of digital interruption, child regulatory outcomes, and the conditional value of mediated technology use.

#### *Parenting stress and situational pressure as proximal triggers*

One of the clearest patterns in the reviewed studies is that digital pacifier use is often associated with parental strain rather than with neutral media preference alone. Several studies show that device use increases in contexts marked by parenting stress, work overload, time scarcity, and difficult child behavior (Brauchli et al., 2024; Li et al., 2023; McDaniel & Radesky, 2020; Mustikasari et al., 2025; Zanzoul et al., 2024). Across these studies, devices appear not simply as entertainment tools but as situational instruments for managing immediate behavioral and emotional demands.

This pattern is not entirely reducible to a single form of stress. The reviewed evidence distinguishes between generalized parenting burden, economically driven strain, and context-specific pressures such as pandemic disruption or work-family conflict. Zanzoul et al. (2024), for example, show that economic stress is more strongly associated with higher and less interactive infant media exposure than general parenting stress alone. Li et al. (2023) further indicate that maternal distress predicts problematic media use through parenting stress and instrumental use, while co-parenting support alters this pathway. The literature therefore suggests that reactive device use is shaped by multiple layers of strain rather than by parental attitude in isolation.

#### *Technoference and the erosion of co-regulatory interaction*

A second recurring pattern concerns technoference, understood as the disruption of parent-child interaction by device use. The literature does not describe this only as a matter of distraction. Instead, technoference appears as a relational mechanism through which the quality of responsiveness, co-regulation, and shared attention is weakened (Mikic & Klein, 2022; Yildiz et al., 2025). In this strand of research, the issue is less the presence of screens in the household than the ways device use can interrupt moments in which children would otherwise receive feedback, soothing, or behavioral guidance from caregivers.

The findings are especially notable where maternal stress, problematic smartphone use, and child self-regulation are modeled together. Yildiz et al. (2025) identify a linked pathway from low child effortful control to increased maternal stress, then to problematic smartphone use and higher technoference, ending in weaker self-regulatory outcomes. Friedmann et al. (2025) add a related pattern by showing that increased maternal media use partially mediated lower infant social development during the pandemic period. Across these studies, device use is not merely concurrent with relational disruption; it is implicated in the mechanism through which interaction quality is reduced.

### *Developmental consequences and recursive risk*

A third pattern concerns the developmental consequences associated with stress-linked and poorly mediated device use. The reviewed studies most consistently associate such use with socio-emotional difficulties, externalizing behavior, problematic media use, and weaker self-regulatory development (Gordon-Hacker & Gueron-Sela, 2020; Jia et al., 2025; McDaniel & Radesky, 2020; Wartberg et al., 2024; Yıldız et al., 2025). In some cases, the evidence also extends beyond socio-emotional development. Martzog and Suggate (2022) show a cross-lagged relationship in which new media use predicts lower later fine motor development, while stronger fine motor competence predicts lower subsequent media use.

The evidence, however, is not uniformly linear. Mallawaarachchi et al. (2025) report that associations between screen-use type and behavioral outcomes are not consistent across contexts, and Kaya et al. (2025) identify differentiated profiles in which high game addiction does not always align with low socio-emotional well-being. These studies complicate any simple risk narrative. They indicate that developmental consequences vary by child characteristics, context, and the specific form of digital engagement involved. Even so, the broader pattern across the corpus supports the view that reactive and poorly scaffolded device use is more likely to coincide with developmental risk than with developmental support.

### *Conditional benefits and the limits of techno-optimism*

The fourth pattern introduces an important qualification. The literature does not present digital technology as uniformly detrimental. Several studies indicate that digital media can support children's learning, enjoyment, or structured engagement when use is purposeful, developmentally appropriate, and relationally mediated (Bar Lev et al., 2024; Burhan et al., 2024; Crescenzi-Lanna, 2022; Griffith et al., 2022). This strand of evidence is important because it prevents the review from collapsing all forms of digital parenting into a single negative category.

At the same time, the corpus places clear limits on techno-optimistic interpretations. Review-based evidence from the Global South stresses that access, inequality, and structural conditions shape the meaning and consequences of digital use in families (Qiu, 2025). The intervention studies in the corpus also point in a suggestive direction: when alternatives such as rhythm-and-movement programs or laughter yoga are introduced, improvements in self-regulation and internal coping can be achieved without reliance on screen-based soothing (Tabei et al., 2025; Williams et al., 2023). The literature therefore supports a conditional rather than celebratory view of technology. Constructive use remains possible, but it appears to depend on mediation quality, developmental appropriateness, and the availability of relational and non-digital alternatives.

### **Cross-theme pattern**

Read together, the reviewed studies describe more than a collection of separate associations. They show a recurring pattern in which parental strain increases the likelihood of reactive device use, reactive device use heightens the risk of technofence, and technofence weakens the relational conditions that support children's regulation and development. The literature does not support this pattern with identical strength in every case, and some findings remain context-dependent or moderated by child characteristics and socio-economic conditions. Even so, the cross-study pattern is sufficiently consistent to justify treating the digital pacifier not simply as a media habit, but as a relational and situational process that links parenting stress, device reliance, and developmental consequence.

This cross-theme pattern does not yet amount to definitive causal proof, and the reviewed corpus remains methodologically diverse. It does, however, provide a sufficiently coherent empirical basis for the interpretive model advanced in this article. The Results therefore establish two points. First, the digital pacifier is best understood within a broader ecology of parenting stress, technofence, and child regulation rather than as an isolated screen-time variable.

Second, the literature is more persuasive when explaining risk-linked reactive use than when making generalized claims about the positive developmental role of digital media.

## Discussion

The literature reviewed here suggests that the digital pacifier is better understood as a relational process than as a discrete parenting technique. What emerges across the studies is not a single act of giving a child a device, but a recurring pattern in which parental strain, device reliance, and child regulatory difficulty may feed into one another. Framed in this way, the Digital Pacifier Cycle is most useful as an interpretive model for organizing a pattern in the literature, not as a settled causal sequence established beyond dispute.

This reading unsettles the familiar assumption that screen exposure simply causes developmental harm in a straightforward direction. Several studies point instead to a more recursive pattern in which child difficulty heightens parental stress, and that stress, in turn, makes media use more likely as a coping response under conditions of overload, fatigue, or constrained support (McDaniel & Radesky, 2020; Gordon-Hacker & Gueron-Sela, 2020). The same body of evidence also makes it difficult to treat device-based soothing as nothing more than a matter of poor parental judgment. In many cases, it appears within caregiving environments marked by economic pressure, work demands, and limited alternatives, which makes it more plausible to read it as a situated response to strain than as a simple behavioral deficit (Zanzoul et al., 2024; Mustikasari et al., 2025).

That is why the distinction between reactive and proactive forms of digital use matters. The studies reviewed do not support a blanket rejection of digital media in family life. What they do show is a meaningful difference between stress-driven use that replaces interaction and more guided forms of use that remain embedded in parental mediation and developmental support. This distinction sharpens broader work on digital parenting, which has often described mediation styles without fully accounting for the conditions under which those styles are sustained, strained, or disrupted (Tan et al., 2024; Flaibam Giovanelli et al., 2025). The more consequential issue is therefore not digital exposure in the abstract, but whether device use displaces, interrupts, or reorganizes the co-regulatory exchanges through which young children learn to manage emotion and behavior.

Within that pattern, technofence is best treated as a relational mechanism rather than as a background distraction variable. Across the reviewed studies, device use becomes developmentally consequential when it weakens responsiveness, fractures shared attention, or interrupts moments in which children would otherwise receive comfort, feedback, and behavioral guidance from caregivers (Mikic & Klein, 2022; Yıldız et al., 2025). This interpretation is reinforced by findings showing that increased maternal media use was associated with weaker infant social development during the pandemic, and that low child effortful control, maternal stress, problematic smartphone use, and technofence may form a linked pathway rather than a loose cluster of separate variables (Friedmann et al., 2025; Yıldız et al., 2025). The value of the model lies here: not in claiming a single universal mechanism, but in clarifying how stress-linked device use may connect interactional disruption to developmental vulnerability.

The evidence does not, however, justify a simple risk narrative. Several findings remain mixed, moderated, or context-dependent, which means the consequences of digital use are unlikely to be uniform across children, families, or forms of engagement. Differences related to child age, device type, behavioral profile, and conditions of use complicate any attempt to treat digital pacifier practices as a single exposure with predictable effects (Mallawaarachchi et al., 2025; Jia et al., 2025; Kaya et al., 2025). For that reason, the Digital Pacifier Cycle is more convincing as a framework for interpreting clustered tendencies than as a deterministic formula. It helps explain why developmental risk appears more often around reactive, poorly scaffolded, and stress-linked use, while still leaving room for variation, moderation, and divergent trajectories.

This has wider implications for how digital parenting is theorized and addressed in practice. The studies reviewed suggest that device reliance in early caregiving cannot be explained adequately through models centered only on parental intention, literacy, or discipline. More layered accounts are needed, particularly those that take socio-economic pressure, uneven caregiving support, and infrastructural constraints seriously as part of the conditions under which parents make everyday decisions (Qiu, 2025; Zanzoul et al., 2024). On that point, the present synthesis extends existing work on digital parenting by bringing parental mediation, technofence, and developmental concerns into the same analytic frame instead of treating them as separate lines of inquiry (Tan et al., 2024). It also suggests that interventions focused only on reducing screen time are likely to be too narrow if they ignore caregiver stress, the scarcity of relational alternatives, and the uneven availability of non-digital supports.

The reviewed studies support a more coherent, though still provisional, understanding of the digital pacifier phenomenon. The main contribution of this review is not that it resolves every ambiguity in the literature, but that it brings dispersed findings into a framework that helps explain why reactive device use repeatedly appears at the intersection of parental strain, technofence, and child regulation. That contribution still needs to be tested across a wider range of cultural and socio-economic contexts, including through context-sensitive screening tools and further work on the model's boundary conditions (Wartberg et al., 2024; Qiu, 2025). Even so, the evidence assembled here is strong enough to suggest that the digital pacifier is more productively understood as a relational and structurally conditioned process than as either a purely private parenting failure or a neutral convenience of contemporary family life (Brauchli et al., 2024; McDaniel & Coyne, 2016; Radesky et al., 2016).

## Conclusion

This review suggests that the digital pacifier is best understood not as a simple parenting shortcut, but as a situated practice that emerges at the intersection of parental strain, device reliance, and the relational conditions of early childhood development. The combined bibliometric mapping and thematic synthesis indicate that the literature is expanding, yet still conceptually fragmented, with the phenomenon often discussed through adjacent constructs rather than through a stable shared framework. Read across the reviewed studies, the evidence points most consistently to a pattern in which reactive, stress-linked device use is associated with technofence and with less favorable developmental conditions, while more guided and developmentally appropriate uses of technology appear to depend on the quality of parental mediation and the availability of non-digital alternatives. In that sense, the Digital Pacifier Cycle is most valuable as an interpretive framework that helps explain how these patterns cluster across the literature, rather than as a definitive causal model.

The contribution of this study therefore lies less in settling the debate than in clarifying its terms. It shows that questions of screen use in early childhood cannot be reduced to parental preference, moral panic, or generalized calls for restriction alone, because the practice is also shaped by economic pressure, caregiving support, and wider socio-cultural conditions. This has implications for both research and practice: future work needs to test the proposed model more rigorously across diverse settings, while intervention efforts may be more effective when they address caregiver stress, strengthen co-regulatory and non-digital options, and remain attentive to contextual inequalities that shape everyday parenting choices. The evidence synthesized here does not support either technological optimism or blanket condemnation. What it does support is a more careful understanding of the digital pacifier as a relational, context-sensitive, and developmentally consequential feature of contemporary family life.

## Declarations

### Author Contribution Statement

Zulfa Khairati: Conceptualization, Methodology, Investigation, Data Curation, Formal Analysis, Visualization, Writing – Original Draft. Agustan: Conceptualization, Methodology, Validation,

Supervision, Writing – Review & Editing. Hikmatur Rahmah: Investigation, Data Curation, Validation, Writing – Review & Editing. Hildawati: Investigation, Resources, Validation, Writing – Review & Editing. Muammar Qadafi: Conceptualization, Formal Analysis, Supervision, Writing – Review & Editing. All authors have read and approved the final version of the manuscript.

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### Data Availability Statement

No primary dataset was generated or analysed in this systematic review beyond the published studies cited in the reference list and described in the Methods section.

### Declaration of Interests Statement

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

### Additional Information

No additional information is available for this paper.

### References

- Bar Lev, Y., & Elias, N. (2020). Digital parenting: Media uses in parenting routines during the first two years of life. *Studies in Media and Communication*, 8(2), 41–48. <https://doi.org/10.11114/smc.v8i2.5050>
- Brauchli, V., Sticca, F., Edelsbrunner, P. A., von Wyl, A., & Lannen, P. (2024). Are screen media the new pacifiers? The role of parenting stress and parental attitudes for children's screen time in early childhood. *Computers in Human Behavior*, 152, Article 108057. <https://doi.org/10.1016/j.chb.2023.108057>
- Burhan, O. S., Praditia, W. E., Admodjo, B. S., Yuniarto, G. Y., & Ghosh, A. (2021). Modern parenting: An ethical way to nurture children in digital era. *Bulletin of Social Informatics Theory and Application*, 5(1), 52–57. <https://doi.org/10.31763/businta.v5i1.199>
- Chirca, R., Pânișoară, G., & Ghiță, C. (2019). The use of digital resources in modern parenting. In M. Vlada, G. Albeanu, D. M. Popovici, R. Jugureanu, A. Adăscăliței, & O. Istrate (Eds.), *Virtual learning - Virtual reality: Proceedings of the 14th International Conference on Virtual Learning* (pp. 384–388). National Institute for Research and Development in Informatics.
- Crescenzi-Lanna, L. (2022). The developmental appropriateness of digital games and its impact on young children's enjoyment and playtime. *International Journal of Child-Computer Interaction*, 33, Article 100480. <https://doi.org/10.1016/j.ijcci.2022.100480>
- Davletshina, M., & Voyer, A. (2025). Balancing act: How Swedish parents and the state shape children's digital experiences. *Journal of Children and Media*. Advance online publication. <https://doi.org/10.1080/17482798.2025.2568126>
- Flaibam Giovanelli, J., Soares da Silva, L., Abadio de Oliveira, W., Scatena, A., Ferreira Semolini, F., & Monezi Andrade, A. L. (2025). Parental mediation in the use of screens by children and adolescents: A systematic literature review. *Ciencias Psicológicas*, 19(1), e4130. <https://doi.org/10.22235/cp.v19i1.4130>
- Friedmann, A., Richter, K., Fuschlberger, T., Voigt, F., Schmid, R., Esser, G., Paulus, F. W., Mall, V., & Nehring, I. (2025). Infant social development before versus during the COVID-19 pandemic and the mediating effect of maternal media use: An observational study from Germany. *Acta Psychologica*, 257, Article 105111. <https://doi.org/10.1016/j.actpsy.2025.105111>
- Gordon-Hacker, A., & Gueron-Sela, N. (2020). Maternal use of media to regulate child distress: A double-edged sword? Longitudinal links to toddlers' negative emotionality. *Cyberpsychology, Behavior, and Social Networking*, 23(6), 400–405. <https://doi.org/10.1089/cyber.2019.0487>

- Griffith, S. F., Hart, K. C., Mavrakis, A. A., & Bagner, D. M. (2022). Making the best of app use: The impact of parent-child co-use of interactive media on children's learning in the U.S. *Journal of Children and Media*, *16*(2), 271–287. <https://doi.org/10.1080/17482798.2021.1970599>
- Jia, W., Deng, X., & Zeng, H. (2025). The association between screen exposure and social-emotional development in children and adolescents: A meta-analysis. *Acta Psychologica*, *261*, Article 105818. <https://doi.org/10.1016/j.actpsy.2025.105818>
- Kaya, Ü. Ü., Koyuncu, M. S., Arabacı, M., Karaca, N. H., & Uzun, H. (2025). Exploring latent profiles of digital game addiction, socio-emotional well-being, and resilience in Turkish preschoolers. *Acta Psychologica*, *261*, Article 105788. <https://doi.org/10.1016/j.actpsy.2025.105788>
- Kurt, I. (2023). Comprehensive review on parenting and technology: Opportunities and challenges in the 21st century. *European Journal of Social Science Education and Research*, *10*(2), 1–14. <https://doi.org/10.26417/610cpd97>
- Laktyukhina, E. (2020). Digitalization of intimacy: Search for optics for digital parenting. *Laboratorium: Russian Review of Social Research*, *12*(3), 178–195. <https://doi.org/10.25285/2078-1938-2020-12-3-178-195>
- Li, J., Zhai, Y., Xiao, B., Xia, X., Wang, J., Zhao, Y., Ye, L., & Li, Y. (2023). Maternal COVID-19 distress and Chinese preschool children's problematic media use: A moderated serial mediation model. *Psychology Research and Behavior Management*, *16*, 2553–2567. <https://doi.org/10.2147/PRBM.S414456>
- Liang, R., & Van Leeuwen, K. (2024). Psychometric properties of the Mobile Phone Parenting Practices Questionnaire (MPPPQ) for Chinese separated families with young children. *Acta Psychologica*, *244*, Article 104197. <https://doi.org/10.1016/j.actpsy.2024.104197>
- Linebarger, D. L. (2015). Educational media: Potentials for learning. In J. D. Wright (Ed.), *International encyclopedia of the social & behavioral sciences* (2nd ed., pp. 246–254). Elsevier. <https://doi.org/10.1016/B978-0-08-097086-8.92031-2>
- Mallawaarachchi, S. R., Anglim, J., & Horwood, S. (2025). Types and contexts of child mobile screen use and associations with early childhood behavior. *Early Childhood Research Quarterly*, *70*, 274–286. <https://doi.org/10.1016/j.ecresq.2024.10.010>
- Martzog, P., & Suggate, S. P. (2022). Screen media are associated with fine motor skill development in preschool children. *Early Childhood Research Quarterly*, *60*, 363–373. <https://doi.org/10.1016/j.ecresq.2022.03.010>
- McDaniel, B. T., & Radesky, J. S. (2020). Longitudinal associations between early childhood externalizing behavior, parenting stress, and child media use. *Cyberpsychology, Behavior, and Social Networking*, *23*(6), 384–391. <https://doi.org/10.1089/cyber.2019.0478>
- Mikić, A., & Klein, A. M. (2022). Smartphone-Nutzung in Gegenwart von Babys und Kleinkindern: Ein systematisches Review [Smartphone use in the presence of infants and young children: A systematic review]. *Praxis der Kinderpsychologie und Kinderpsychiatrie*, *71*(4), 305–326. <https://doi.org/10.13109/prkk.2022.71.4.305->
- Mustikasari, M., Syukur, M., Najamuddin, Kamaruddin, S. A., & Asrifan, A. (2025). Digital parenting in the urban millennial era: Social change in young parents' child-rearing practices using mobile touch screen devices in Makassar, Indonesia. *Journal of Humanities and Social Sciences Studies*, *7*(5), 47–58. <https://doi.org/10.32996/jhsss.2025.7.5.5>
- Qiu, Y. (2025). Techno-optimism in the face of the digital divide: A systematic review on using mobile technologies for children's environmental learning in the Global South. *International Journal of Child-Computer Interaction*, *46*, Article 100786. <https://doi.org/10.1016/j.ijcci.2025.100786>
- Radesky, J. S., Kistin, C. J., Eisenberg, S., Gross, J., Block, G., Zuckerman, B., & Silverstein, M. (2016). Parent perspectives on their mobile technology use: The excitement and

- exhaustion of parenting while connected. *Journal of Developmental & Behavioral Pediatrics*, 37(9), 694–701. <https://doi.org/10.1097/DBP.0000000000000357>
- Tabei, M., Hasani, H., Negahban Bonabi, T., Kargar, N., & Tamadon, F. (2025). Effects of laughter yoga on separation anxiety in kindergarten children: Children's characteristics and related factors. *Acta Psychologica*, 258, Article 105281. <https://doi.org/10.1016/j.actpsy.2025.105281>
- Tan, C. Y., Pan, Q., Tao, S., Liang, Q., Lan, M., Feng, S., Cheung, H. S., & Liu, D. (2024). Conceptualization, measurement, predictors, outcomes, and interventions in digital parenting research: A comprehensive umbrella review. *Educational Research Review*, 45, Article 100647. <https://doi.org/10.1016/j.edurev.2024.100647>
- Türen, Ş., & Bağçeli Kahraman, P. (2025). The predictive relationships between children's digital game addiction tendencies and mothers' digital parenting awareness and digital literacy levels. *Education and Information Technologies*, 30(3), 3115–3144. <https://doi.org/10.1007/s10639-024-12932-4>
- Wartberg, L., Schmidt, H., Menrath, I., Witt, S., & Pawils, S. (2024). Development and psychometric evaluation of the IDMUQ: A short measure to assess increased digital media use in preschool children. *Social Sciences*, 13(9), Article 472. <https://doi.org/10.3390/socsci13090472>
- Williams, K. E., Hayes, N., Berthelsen, D., & Quach, J. (2023). A longitudinal model of sleep problems and classroom self-regulation across elementary school. *Journal of Applied Developmental Psychology*, 89, Article 101596. <https://doi.org/10.1016/j.appdev.2023.101596>
- Yıldız, E., Keşşafoglu, D., Altundal, M. N., Akel, G., & Uzundağ, B. A. (2025). Navigating the digital age: Children's self-regulatory skills and technoference in parent-child interactions. *Family Relations*, 74(4), 1493–1507. <https://doi.org/10.1111/fare.13179>
- Zanzoul, S., Ohman-Strickland, P. O., Mendelsohn, A. L., Malke, K., Bator, A., Hemler, J., & Jimenez, M. E. (2024). Stress and infant media exposure during COVID-19: A study among Latino families. *Journal of Developmental & Behavioral Pediatrics*, 45(1), E14–E20. <https://doi.org/10.1097/DBP.0000000000001231>