

Mapping Parental Motivations and Concerns Regarding Smartphone Use In Early Childhood: A Scoping Review

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The increasing use of smartphones among young children has raised concerns about developmental outcomes and digital parenting. While prior research has focused on parental perceptions and mediation strategies, less attention has been given to parents' motivations for allowing smartphone use. Understanding these motivations is essential for developing effective digital parenting strategies and public health interventions. This scoping review, guided by the PRISMA-ScR framework, examined parental motivations for smartphone use in early childhood. Literature from six databases (2014–2025) and grey sources was systematically reviewed, with screening and analysis conducted using Rayyan.ai. Of 796 records, 41 studies met the inclusion criteria, focusing on parents of children aged 3–6 years. Three key motivation domains emerged: educational purposes, practical needs (e.g., occupying or calming children), and balancing benefits and risks through regulation. These findings emphasize the importance of parental intent in supporting appropriate technology use and promoting children's well-being in the digital age.

Keywords: Digital Parenting; Parental Motivations; Smartphone Use; Early Childhood; Parental Mediation.

INTRODUCTION

Smartphone use among children aged 3–6 years has increased markedly over the past decade (Yadav & Chakraborty, 2022). Recent surveys indicate that more than 60% of preschoolers spend over two hours per day on screens (Ponti, 2023), with daily use reaching up to 3.6 hours in some regions (Bhutani et al., 2025). In Western countries, 74%–85% of

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preschoolers' experience excessive screen time (Kwon et al., 2024). This rapid increase has raised global concerns regarding potential adverse effects on early childhood development.

In response, leading health authorities such as the American Academy of Pediatrics (AAP) and the World Health Organization (WHO) recommend limiting screen time for children aged 2–5 to no more than one hour per day of high-quality programming (Hood et al., 2021). Excessive screen exposure is linked to sedentary behavior, displacement of active play, and risk of addictive tendencies (Tekeci et al., 2024). Empirical evidence consistently associates high screen exposure with delays in motor skills, language acquisition, social–emotional development, and executive-functioning skills in children under five (Ponti et al., 2017).

Despite these concerns, smartphones can also offer meaningful educational benefits when used appropriately. Digital platforms support creativity, higher-order thinking, vocabulary development, and problem-solving (Law et al., 2025; Nikolopoulou, 2021). Moderate, supervised use has been linked to improved cognitive engagement and executive function supporting learning quality (Qu et al., 2025). This dual role—offering learning opportunities while posing developmental risks—underscores the complexity of parenting in the digital age.

Parents are central to children's early digital experiences. They are typically the first to introduce smartphones (Papadakis et al., 2019), establish rules for access and content, and shape children's attitudes through their own practices (Mannell et al., 2024). A substantial body of work has examined parental mediation strategies, attitudes, and concerns, yet comparatively little attention has been devoted to parents' underlying motivations for granting smartphone access to early childhood and how these motivations intersect with concerns about developmental, behavioral, and social-emotional risks.

No existing systematic or scoping review has comprehensively synthesized evidence on these dimensions. Addressing this gap is urgent: mapping parental motivations and apprehensions provides a critical empirical foundation for targeted interventions, evidence-based parenting guidelines, and resources for educators and policymakers. This scoping review therefore addresses the following question: What are the parental motivations and concerns related to smartphone use among children aged 3–6 years?

METHODS

This study employed a scoping review approach to systematically map and categorize parental motivations and concerns related to smartphone use among children aged 3–6 years. The review adhered to the PRISMA Extension for Scoping Reviews (PRISMA-ScR) to enhance transparency, rigor, and replicability (Tricco et al., 2018). PRISMA-ScR was selected because the aim of this study was to comprehensively map the breadth and nature of existing evidence rather than to evaluate intervention effectiveness or estimate pooled effects. Given the diverse disciplinary backgrounds of potential readers, PRISMA-ScR provides a clear and standardized reporting structure for study identification, selection, data charting, synthesis, and presentation of findings.

The review was conceptually informed by established scoping review methodologies, including the framework proposed by Arksey and O'Malley (2005), the methodological refinements suggested by Levac, Colquhoun, and O'Brien (2010), and recommendations from the Joanna Briggs Institute (JBI). However, PRISMA-ScR was adopted as the primary reporting guideline because it provides specific recommendations for transparent and comprehensive reporting of scoping reviews, thereby improving the consistency, reproducibility, and interpretability of review findings. The review followed six stages: identifying the research question, identifying relevant studies, selecting studies, charting the data, collecting and summarizing results, and conducting a consultation exercise (Mak & Thomas, 2022).

A structured validation protocol was applied across all stages. For literature screening, two independent reviewers manually verified a random sample of 20% of Rayyan.ai-screened records, with inter-rater reliability assessed using Cohen's Kappa ($\kappa \geq 0.80$). For data extraction, 25% of outputs were independently cross-checked against source documents. For thematic synthesis, Rayyan.ai-proposed categories were confirmed only after two reviewers reached $\geq 85\%$ agreement on a 30% coded subset.

Search Strategy

A comprehensive literature search was conducted across six databases: Scopus, Science Direct, ProQuest, Sage, Emerald Insight, and Springer Link, complemented by Google Scholar and Google for grey literature. The search was limited to studies published between 2014 and 2025. Keywords combined parental perspectives with children's smartphone use, including terms such as "parental motivation," "parental concern," "smartphone," "early childhood," "screen time," and "impact."

Inclusion and Exclusion Criteria

Studies were included if they were empirical investigations published in peer-reviewed journals or high-quality grey literature, focused on parents of early childhood (ages 3–6), explicitly examined parental motivations, attitudes, perceptions, or beliefs regarding smartphone use, published in English between 2014 and 2025, and employed qualitative, quantitative, or mixed-methods designs. Drawing on Social Cognitive Theory (SCT; Bandura, 1986), studies focusing on parental attitudes and perceptions were considered conceptually integral to motivational processes and included to ensure a theoretically coherent synthesis.

Studies were excluded if they did not focus on parents, addressed general technology use without specific reference to smartphones, examined only effects of smartphone use without parental perspectives, were non-empirical, or analyzed interventions without considering parental perspectives.

Document Selection

The initial search yielded 796 studies. After removing duplicates, 445 unique articles remained for screening. Title and abstract screening were conducted using Rayyan.ai, followed by full-text review. Two researchers independently screened all studies with inter-rater reliability assessed

using Cohen's Kappa ($\kappa \geq 0.80$), and disagreements were resolved through discussion or consultation with a third researcher. Ultimately, 41 studies met all inclusion criteria.

Data Extraction and Synthesis

Data were extracted using a standardized charting form capturing author(s), year, study design, participants, and main findings. Extracted data were analyzed thematically to identify recurring patterns in parental motivations and concerns, categorized into three domains: educational intentions, practical needs, and strategies for balancing benefits and risks. Social Cognitive Theory (SCT; Bandura, 1986) was adopted as the analytical framework, using constructs such as observational learning, self-efficacy, and reciprocal determinism to interpret parental decision-making. The review was pre-registered with the Open Science Framework (OSF; DOI: 10.17605/OSF.IO/3DY8V).

RESULTS

A total of 796 records were identified across six databases and grey literature sources. After removing duplicates and screening procedures, 41 studies met the inclusion criteria. Approximately 65% employed quantitative approaches, 25% qualitative methods, and 10% mixed-methods designs. Geographically, most studies were conducted in high-income countries (Europe, North America, and parts of Asia), with limited representation from low- and middle-income regions.

Thematic synthesis identified three primary domains of parental motivations: (1) enhancing educational outcomes, (2) practical reasons, and (3) balancing benefits and risks. A cross-cutting category of parental concerns emerged, encompassing developmental impacts, family relationships, and exposure to inappropriate content. A comprehensive overview is provided in Tables 1 and 2, while study characteristics are summarized in Table 3.

Enhancing Educational Outcomes

Across multiple contexts, parents perceived smartphones as tools to support early learning, cognitive development, and school readiness. This motivation was consistently reported in studies from the United States, Europe, and Asia. Some studies reported strong endorsement of smartphones as educational tools—even to the extent of diverging from expert screen-time recommendations—while others indicated that educational motivation coexisted with awareness of potential risks, suggesting that educational intentions may also justify increased exposure.

Practical Reasons

Practical motivations were evident across diverse cultural contexts, primarily reflecting parents' use of smartphones to manage daily routines, occupy children, or regulate behavior. In several cases, smartphone use functioned as a convenience strategy to facilitate parental tasks; in others, it was used reactively to manage children's emotional states, such as calming tantrums. This distinction indicates that practical use may be driven by both situational demands and child-specific characteristics.

Balancing Benefits and Risks

This was the most prevalent theme across included studies. Parents commonly expressed ambivalent attitudes, simultaneously recognizing developmental benefits and concerns about potential risks. Many adopted mixed mediation strategies—combining restriction, co-use, and active guidance. Cross-cultural differences were evident: some contexts emphasized relational and social concerns, while others focused on cognitive and developmental risks. Several studies identified inconsistencies between parental intentions and actual practices, indicating that rules were often applied situationally rather than consistently.

Parental Concerns

Parental concerns clustered into three main areas: developmental impacts, disruption of family relationships, and exposure to inappropriate content. Developmental concerns were most consistently reported across studies. Concerns about family relationships highlighted reduced parent–child interaction and potential device dependency. Content-related concerns primarily involved exposure to inappropriate or harmful material. Notably, while concerns were widely reported, they did not consistently translate into restrictive behaviors, suggesting a gap between parental awareness and regulatory practices.

Contextual variation was evident: Korean parents emphasized social interaction and peer relationships; Australian studies focused on behavioral and cognitive outcomes; Pakistani parents reported broader concerns including sleep disruption, reduced physical activity, and emotional instability; Spanish parents highlighted motor development and reduced outdoor activity; and a US study identified exposure to sexual content as the primary concern (Martin et al., 2021).

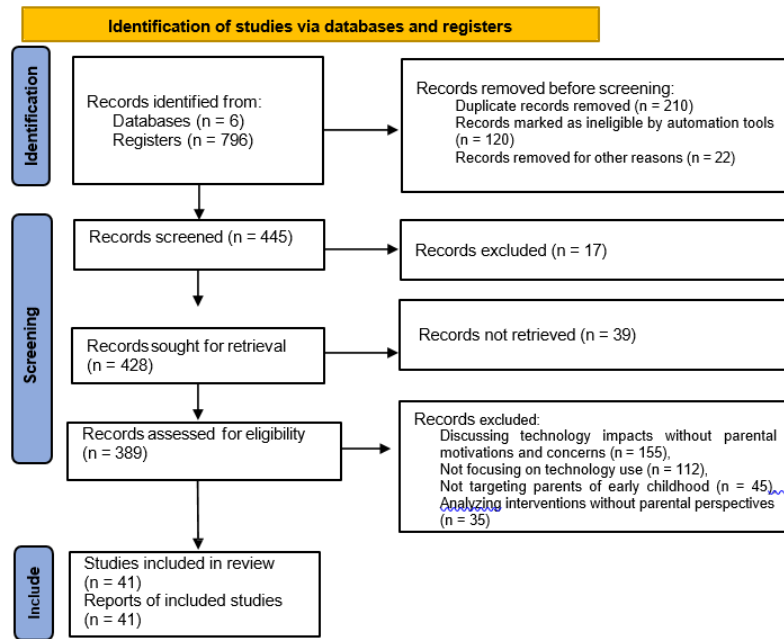


Figure 1. PRISMA Flowchart Diagram

Table 1: Summary of Included Documents on Parental Motivations

No	Author(s) & Year	Research Title	Design	Respondents	Key Finding
Educational Goals					
1	Vittrup et al., 2016	Parental perceptions of the role of media and technology in their early childhood's lives	Quantitative	101 US parents (ages 2–7)	Parents showed positive attitudes toward media; many disagreed with expert screen-time recommendations
2	McCloskey et al., 2018	Parent perceptions of mobile device use among preschool-aged children in rural head start centers	Cross-sectional survey	192 parents, Colorado	Parents provide mobile devices to children as a learning tool
3	Chaudron et al., 2018	Early childhood (0–8) and digital technology – a qualitative study across europe	Cross-national qualitative	234 parents, 21 countries	Parents support digital learning more when schools integrate technology in homework
4	Vaiopoulou et al., 2021	Parents' perceptions of educational apps use for kindergarten children	Quantitative	435 parents, Greece	Parents see developmentally appropriate technology as beneficial
5	Wan Zakaria et al., 2022	Parents' attitudes towards digital technology use in early childhood	Quantitative	136 parents, Malaysia	Parents showed positive attitudes toward digital technology in early childhood

No	Author(s) & Year	Research Title	Design	Respondents	Key Finding
6	Istenič et al., 2023	Parental perceptions of child's play in the post-digital era	Descriptive survey	306 parents, Slovenia	Parents are aware of both risks and learning benefits of technology
Practical Reasons					
7	Azabdaftari et al., 2020	Unrestricted prevalence of sedentary behaviors from early childhood	Cross-sectional	480 parents, Iran	Parents let children use devices to stay occupied and not disturb them
8	Eichen et al., 2021	Families' digital media use: Intentions, rules and activities	Quantitative	150 Austrian parents (1.5–6 yrs)	Parents give digital media to children to allow themselves to do household tasks
9	Ashok, 2023	Mobile device use for calming and emotional reactivity in early childhood	Prospective cohort	500 parents (3–6 yrs), India	Parents frequently use mobile devices to calm young children
10	Konok et al., 2024	Cure for tantrums? Longitudinal associations between parental digital emotion regulation and children's self-regulatory skills	Longitudinal	265 Canadian families (2–5 yrs) (N= 265)	Parents of angrier children use digital devices more to regulate emotions
11	Genc, 2014	Parents' Perceptions about the Mobile Technology Preschool Aged Children	Quantitative research study	85 parents from three preschools in Turkey.	Parents recognize widespread mobile use but remain cautious about negative impacts

No	Author(s) & Year	Research Title	Design	Respondents	Key Finding
12	Wu et al., 2014	Parenting approaches and digital technology use of preschool age children in a Chinese community	Exploratory quantitative study	202 parents between the ages of 3 and 6 in Hong Kong	Parents combine restrictive, instructive, and co-use approaches rather than predominantly restricting
13	Nevski & Siibak, 2016	The role of parents and parental mediation on 0–3-year olds' digital play with smart devices: Estonian parents' attitudes and practices	Quantitative approach	Estonian parents (N = 198) who allowed their 0–3-year olds	Parents justify touchscreen use for education, entertainment, and behavior regulation; mediation varies by child age and gender
14	O'Connor & Fotakopoulou, 2016	Use of touchscreen technology by 0–3-year-old children: Parents' practices and perspectives in Norway, Portugal and Japan	Quantitative and qualitative research design	Parents of 0–3-year-old children in Norway, Portugal and Japan	Parents note benefits but worry about replacing traditional play and exposure to inappropriate content.
15	Bentley et al., 2016;	Mothers' views of their preschool child's screen-viewing behavior: a qualitative study	Qualitative study	Twenty-six mothers of preschool children in Bristol, UK	Devices used as distractions and educational tools; most mothers set inconsistently enforced rules

No	Author(s) & Year	Research Title	Design	Respondents	Key Finding
16	Ebbeck et al., 2016	Singaporean parents' views of their early childhood's access and use of technological devices	Quantitative and qualitative study	1,058 parents of children's aged below 7 years in Singapore	Parents allow devices mainly for learning, stress relief, and bonding; view appropriate use as educational
17	Sergi et al., 2017	Parental perspectives on children's use of portable digital devices	Qualitative study	Five parent in rural towns of a southern US State	Parents see devices as educational and entertaining, yet worry about overuse and their growing parenting role
18	Barmomanesh & Vodanovich, 2017	Use of touch screen devices among children 0-5 years of age: Parental perception	Quantitative method	166 parents of children 0-5 years in New Zealand.	Parents have both negative and positive perspectives toward the use of these devices by their children
19	Shah & Phadke, 2017	Mobile phone use by early childhood and parent's views on children's mobile phone usage	A cross-sectional study	90 Parents of children aged 6 months to 4 years in India	Most oppose early use but still allow it, typically under an hour, though some exceed three.
20	Hinkley & McCann, 2018	Mothers' and father's perceptions of the risks and benefits of screen time and physical activity during early childhood: A qualitative study	Qualitative research design	Mothers and fathers (n = 28) of children aged 3-5 years in Australia	Smartphones benefit learning and relaxation but carry risks of negative habits, inappropriate content, and developmental harm

No	Author(s) & Year	Research Title	Design	Respondents	Key Finding
21	Isikoglu Erdogan et al., 2019	Do parents prefer digital play? examination of parental preferences and beliefs in four nations	Mixed-method research study	500 parents who had a child aged 4–6 years in four countries (USA, Turkey, China and South Korea)	Digital play was least preferred, especially among higher-educated parents.
22	Johnson & Hertlein, 2019	Parents' perceptions of smartphone use and parenting practices	Qualitative research design	Twelve parents from the Southwestern United States	Five themes: disengagement, concern for children's future, shifting norms, need for boundaries, cognitive dissonance
23	Chen et al., 2019	Singapore parents' use of digital devices with early childhood: Motivations and uses	Exploratory Qualitative approach	20 parents of toddler or preschooler in Singapore	Singaporean parents use devices for learning, stress relief, and bonding, guided by perceived benefits and risks
24	Kaya, 2020	Perceptions of parents having children in preschool level regarding their children's screen use	Qualitative research	25 who had preschool-aged children in Turkey.	Parents reported both positive and negative perceptions about screen usage the views that screen use adversely affects children are more distinct

No	Author(s) & Year	Research Title	Design	Respondents	Key Finding
25	Golden et al., 2020	Parental decision-making: infant engagement with smartphones	Qualitative study	Twelve parents with infants younger than one year	Parents seek balance between smartphone use and traditional activities but struggle to achieve it.
26	Dardanou et al., 2020	Use of touchscreen technology by 0-3-year-old children: Parents' practices and perspectives in Norway, Portugal and Japan	Quantitative and qualitative study	552 parents of 0–3-year-old children in Norway, Portugal and Japan concerning	Parents in Norway, Portugal, and Japan share similar views, but practices vary due to socio-cultural differences in perceived benefits and risks
27	Gjelaj et al., 2020	Digital technologies in early childhood: Attitudes and practices of parents and teachers in Kosovo	Mixed research approach, interviews and an online questionnaire.	100 parents in Kosovo	Parents see developmental benefits but worry about reduced play, physical issues, and sleep problems.
28	Brito & Dias, 2020	“Which apps are good for my children?”: How the parents of early childhood select apps	Quantitative method	1968 parents of children under 8 years old in Portugal	Parents mediate use, prioritizing learning and safety over features or children's preferences

No	Author(s) & Year	Research Title	Design	Respondents	Key Finding
29	Mallawaarachchi et al., 2022	“You’re damned if you do, you’re damned if you don’t”: a qualitative exploration of parent motives for provision of mobile screen devices in early childhood	Qualitative study of longitudinal survey	45 primary caregivers of toddlers and preschoolers in Australia	Parents allow smartphones for convenience, connection, and learning but worry about risks, balancing use with rules and supervision.
30	Tanusha et al., 2023	Parent’s perception of digital device use among their preschool children and its associated factors in Kota Setar, Kedah	Cross-sectional study	Parents of 145 children in Kota Setar, Kedah	Parents hold mixed views, seeing risks to physical and cognitive development but some social benefits.
31	Selak et al., 2023	Characteristics and parental viewpoints regarding digital device use in children aged 4 to 8 years	Cross-sectional descriptive survey	31 parents of 4 to 8 years in Croatia	Parents use devices for education, entertainment, and managing attention, while limiting use due to mixed developmental impacts
32	Lukavská & Gabrhelík, 2024	Parental views on their children’s smartphone use during personal and relational activities	Quantitative cross-sectional survey	826 parents of children in Prague, Czech Republic,	Parents regulate use due to learning, sleep, and family concerns, but allow it pragmatically to manage attention.

No	Author(s) Year	& Research Title	Design	Respondents	Key Finding
33	San-Martín- Roldán et al., 2024	Parental norms and perceptions regarding use of mobile devices by children under five years	Quantitative, analytical, cross-sectional, exploratory study	183 parents in Barcelona, Spain	Parents used the mobile device to keep the child entertained in different environments and as a reward or punishment
34	Legorburu Fernandez et al., 2025	Understanding parents' motivations for giving their children smartphones: A qualitative study	Qualitative cross-sectional design	642 parents with children aged 2–16 years in Basque Country (Northern Spain)	Five factors shaped parents' decisions: peer inclusion, social pressure, autonomy support, communication needs, and parental control, influenced by norms, safety, and views on independence

Table 2: Summary of Included Documents on Parental Concerns

No	Author(s) & Year	Research Title	Design	Respondents	Key Finding
Developmental Impacts					
1	Lee & Lee, 2014	Parent survey on the effects of digital instrument on the language development in Korean children	A cross-sectional descriptive survey design	One hundred eighty-six parents in Korean	Most parents concerned about negative impact of smartphones, particularly on children's social relationships
2	Pedrouzo et al., 2020	Screen use among early childhood and parental concern	A cohort study	Parents of children aged ≥ 18 months and < 4 years in Sydney	Parental concern about psychomotor development
3	Milford et al., 2022	An initial investigation into parental perceptions surrounding the impact of mobile media use on child behavior and executive functioning	Cross-sectional survey	281 parents of 4-17 children years old in Australia	Parents perceive negative impacts on behavior and executive functioning
4	Ayesha Anwar et al., 2024	Parent's perception regarding the effects of excessive use of mobile phone on children's health: A sociological study in City Dera Ghazi Khan	Cross-sectional study	280 parents in the city of Dera Ghazi Khan	Parents note extended screen use leads to sleep issues, less exercise, poor focus, and emotional instability

No	Author(s) & Year	Research Title	Design	Respondents	Key Finding
5	Idoiaga-Mondragon et al., 2025	Parental concerns about children's smartphone use: From personal misuse to societal impacts	Cross-sectional qualitative design	615 parents in the Basque Country, northern Spain	Parents worry smartphone use reduces outdoor play and may hinder motor development
Family Relationship					
6	Danet, 2020	Parental Concerns about their school-aged children's use of digital devices	Survey	One hundred and forty-seven French parents of school-aged children (6–12 years)	Parents believe ICT negatively impacts family functioning and relationships
Inappropriate Content					
7	Martin et al., 2021	Examining parents' perception on elementary school children digital safety	Survey-based study	113 parents in USA	Primary concern is children's exposure to sexual content

Table 3: Summary of Characteristics of Included Studies (N = 41)

Characteristic	Category	n	%
Study Design	Quantitative	27	65.9
	Qualitative	10	24.4
	Mixed-methods	4	9.7
Geographic Region	Europe	18	43.9
	Asia	12	29.3
	North America	6	14.6
	Australia/Oceania	3	7.3
	Middle East/Africa	2	4.9
Income Classification	High-income countries (HICs)	32	78.0
	Low/middle-income countries (LMICs)	9	22.0
Publication Year	2014–2016	8	19.5
	2017–2019	6	14.6
	2020–2022	14	34.1
	2023–2025	13	31.7
Sample Size	< 50 participants	5	12.2
	50–199 participants	14	34.1
	200–499 participants	12	29.3
	≥ 500 participants	10	24.4
Range	12–1,968 participants	—	—

DISCUSSION

Parents' decisions to provide smartphones to early childhood reflect intertwined motivations and concerns shaped by the growing integration of digital devices into early childhood routines. This review identified three main motivations: educational purposes, practical needs, and balancing learning with entertainment. Many parents regard smartphones as tools to enhance cognitive and language development through apps, videos, and games, in line with the global emphasis on digital literacy and creativity (Griffith et al., 2020). Over time, mediation has shifted from predominantly restrictive approaches to more enabling strategies, such as guidance, co-use, and structured supervision, reflecting evolving norms and the recognition of educational potential of digital media (Chaudron, Gioia, et al., 2018; Livingstone et al., 2017).

Practical motivations remain prominent, as smartphones are used to occupy children, manage their behavior, and help parents balance caregiving with other responsibilities (Eichen et al., 2021). Although effective in the short-term, such practices raise concerns about prolonged screen exposure and overreliance on devices for behavioral regulation.

Parents consistently report concerns about excessive screen time, socio-emotional delays, language difficulties, exposure to inappropriate content, and health risks such as poor sleep and reduced physical activity (Hale & Guan, 2015). This tension reflects a pragmatic approach in which parents try to maximize educational and entertainment benefits while minimizing risks, although the strategies are often inconsistently applied (Chaudron, Gioia, et al., 2018).

Parental motivations and concerns can be understood through Social Cognitive Theory (SCT), which explains behavior as arising from the reciprocal interaction of personal factors (beliefs, attitudes, self-efficacy), behavioral patterns (mediation strategies), and environmental influences (sociocultural norms, family context) (Woodcock & Tournaki, 2023). Parents who perceive smartphones as educational tools often display positive outcome expectations and higher self-efficacy, core SCT constructs (Hammer et al., 2021). They tend to model constructive use and engage in co-use providing children with behavioral scripts and implicit reinforcement for appropriate digital engagement (Chaudron, Marsh, et al., 2018).

Parents with higher technological comfort and educational aspirations are more likely to adopt enabling mediation, illustrating how self-efficacy translates expectations into consistent strategies (Istenci et al., 2023; Vaiooulou et al., 2021; Wan Zakaria et al., 2022). Most studies reporting enabling mediation were conducted in high-income countries (HICs), while research from low- and middle-income countries (LMICs) more often highlighted reliance on smartphones for behavioral management, underscoring the role of environmental resources and sociocultural contexts.

In contrast, parents motivated by practical needs, such as occupying or calming children, often report lower self-efficacy and rely on smartphones as behavioral management tools rather than learning resources (Azabdaftari et al., 2020; Eichen et al., 2021). This aligns with SCT's premise that when personal efficacy is low and environmental pressures are high (limited support, time constraints), behavior is guided more by immediate reinforcement than by long-term developmental goals (Ashok, 2023; Konok et al., 2024).

Concerns about potential harms, such as developmental risks, disrupted family relationships, and exposure to inappropriate content, also reflect perceived environmental constraints shaping both expectations and mediation practices (Hinkley & McCann, 2018; Idoaga-Mondragon et al., 2025; Lee & Lee, 2014; Martin et al., 2021). Many parents respond by employing reinforcement-based strategies, such as restricting access, setting screen-time limits, or granting device use as a reward, practices consistent with SCT's principle that reinforcement shapes behavioral patterns by guiding children's expectations and responses (San-Martin-Roldán et al., 2024).

From an SCT perspective, these dynamics demonstrate reciprocal determinism: parents' beliefs and strategies adapt in response to children's reactions (compliance or resistance), prompting continuous adjustment in mediation practices (Devi et al., 2017). Longitudinal evidence shows that restrictive mediation and children's digital behaviors influence each other over time (Geurts et al., 2022), whereas parental self-efficacy is pivotal for

sustaining constructive guidance (Milford et al., 2024). Observational learning through parental modeling has also been shown to predict children's screen behaviors (Yu-ting et al., 2025), while broader social norms and family values further shape media choices (Lafton et al., 2024).

Cultural Factors

Cultural, socioeconomic status (SES), and parental gender are key environmental influences in SCT, shaping both parents' motivations and their ability to apply consistent mediation strategies. In HICs such as the UK, Australia, Singapore, and several European countries, parents more often report enabling mediation that supports educational use (Chaudron, Marsh, et al., 2018; Dardanou et al., 2020; Ebbeck et al., 2016). In contrast, in LMICs such as Iran, India, and Malaysia, parents more frequently adopt practical or restrictive strategies, often driven by limited resources, heavy workloads, or the need to manage children's behavior (Ashok, 2023).

Recent studies have further refined this pattern. In China, higher parental education is positively associated with active mediation and supervision, which in turn correlate with higher levels of children's digital literacy, whereas families with lower SES are less likely to adopt enabling strategies (Lou et al., 2024). In Nigeria, mothers more often apply restrictive and active mediation, especially for daughters, highlighting how gender roles and cultural expectations jointly shape mediation practices (Adigwe, 2024). These findings suggest that enabling mediation is not simply a matter of belief in educational value but is constrained by SES, caregiving roles, time, knowledge, and resource access. Parents in LMICs may share educational aspirations but face environmental barriers, such as limited infrastructure and information, which reduce their self-efficacy in implementing co-use or guided mediation (Golden et al., 2020; Welsh et al., 2024).

Cultural orientation also shapes the outcome expectations and mediation norms. In more collectivist societies (Turkey, Malaysia, and parts of East Asia), parents often emphasize obedience, safety, and family harmony, favoring restrictive or rule-based mediation (Wan Zakaria et al., 2022). In contrast, in more individualist or technologically advanced settings (Western Europe, the US), parents tend to view smartphones as tools for cognitive and educational enrichment, consistent with SCT's construct of positive outcome expectations (McCloskey et al., 2018).

Gendered caregiving patterns add another dimension, mothers often express greater concern about risks and take a more active role in enforcing restrictions (Hinkley & McCann, 2018), whereas fathers in some settings adopt more permissive or pragmatic approaches. These differences reflect variations in risk perception, caregiving responsibilities, and social expectations, which in turn influence self-efficacy and outcome expectations as conceptualized in SCT (Luo et al., 2023).

These findings underscore that parental mediation patterns are dynamic rather than static, shaped by children's behaviors, parents' evolving self-efficacy, and shifting societal norms regarding digital technology use. The three identified motivation domains — educational purposes, practical caregiving needs, and risk-benefit management — are not mutually exclusive but dynamically interact, with parents

simultaneously navigating developmental aspirations, immediate caregiving demands, and concerns about potential harms.

Guided by the principle of reciprocal determinism, these dynamics underscore the need for longitudinal, context-sensitive research to illuminate how motivations, concerns, and strategies adapt alongside family and sociocultural change. Future interventions and policies should move beyond uniform recommendations by addressing each motivational domain with targeted strategies. For educational purposes, interventions should focus on strengthening parental self-efficacy through digital literacy programs that build confidence in selecting and co-using developmentally appropriate content. For practical caregiving needs, support systems such as structured screen-time routines, alternative caregiving strategies, and community-based parenting programs should be developed to reduce overreliance on smartphones as behavioral management tools. For risk-benefit management, parents should be equipped with evidence-based frameworks for evaluating content quality, setting consistent boundaries, and applying age-appropriate mediation strategies that balance developmental benefits against potential harms. Such approaches should prioritize flexible, culturally responsive guidance that empowers parents across diverse socioeconomic and cultural contexts to sustain constructive mediation practices in a rapidly transforming digital ecosystem.

Limitations of the Study

This review has several limitations. Most of the included studies were conducted in high-income countries, mainly in Europe, North America, and parts of Asia, limiting the generalizability of the findings to low- and middle-income contexts with different cultural norms and resource constraints. The wide variation in study design, sampling strategies, and measurement tools hampers comparability and precludes robust meta-analytic synthesis.

The predominance of cross-sectional designs further limits causal inference and obscures temporal changes in parental motivations, mediation strategies, and child outcomes. In addition, heavy reliance on parental self-reports introduces potential recall and reporting biases, particularly regarding children's screen time and media practices. The limited use of SCT or other behavioral frameworks constrains the systematic examination of how personal factors (self-efficacy), behavioral strategies, and environmental conditions interact over time. Future research should prioritize longitudinal and cross-cultural designs, adopt theory-driven models such as SCT, and integrate mixed methods with objective measures of children's smartphone use to strengthen causal inference, enhance validity, and inform culturally responsive interventions.

Recommendations for Future Research

Future research must move beyond descriptive approaches to address key gaps in the literature. Longitudinal and experimental studies are needed to establish causal relationships between parental motivations,

mediation strategies, and children's developmental outcomes, as current evidence remains largely cross-sectional. Greater attention should also be given to contextual factors, including cultural, socio-economic, and family dynamics, which may significantly shape digital parenting practices. In addition, future work should clarify the mechanisms underlying the dual role of smartphone use by examining how benefits and risks interact, particularly through factors such as parental mediation, digital literacy, and self-efficacy. Moving beyond simple screen-time measures, more nuanced assessments of content quality, usage context, and parent-child interaction are essential. Finally, the limited number of intervention-based studies highlights the need for rigorous research to develop and evaluate evidence-based digital parenting programs.

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AUTHOR RESPONSIBILITY STATEMENT

The authors confirm that they are responsible for the accuracy and integrity of the content of this manuscript. All authors contributed to the preparation and review of the manuscript and approved the final version for submission.

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