

## THE INFLUENCE OF DIGITAL MEDIA USE IN PARENTING TO CHILD DEVELOPMENT UNDER 24 MONTHS: A SYSTEMATIC LITERATURE REVIEW

*Pengaruh Penggunaan Media Digital dalam Pengasuhan terhadap  
Perkembangan Anak di Bawah 24 Bulan: Sistematis Literatur Review*

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### ABSTRAK

*Manusia sebagai makhluk sosial akan selalu terpapar oleh kemajuan teknologi, termasuk anak. Tujuan dari studi ini adalah untuk mengetahui dampak dari kemajuan teknologi terhadap perkembangan anak di bawah usia 2 tahun. Sistematis literatur review ini mengikuti guidelines PRISMA, pengumpulan artikel selesai pada tanggal 7 Maret 2024 menggunakan database Pro-Quest, Science Direct, dan juga Google Scholar, dengan kata kunci penggunaan media digital dan perkembangan anak 0-24 bulan. Kriteria inklusi yaitu penelitian cross sectional, melibatkan ibu atau keluarga yang memiliki anak dibawah 24 bulan, dan penggunaan digital media. Kriteria eksklusi, keluarga tidak utuh dan publikasi sebelum tahun 2020 atau setelah 2023. Studi ini melibatkan 10 riset yang terpilih. Hasil menunjukkan paparan digital media yang terlalu dini dan berlangsung lama berbahaya bagi perkembangan anak, dengan demikian perlu adanya upaya pencegahan paparan dini media digital pada anak dibawah 2 tahun, agar tidak terjadi keterlambatan perkembangan kognitif, addiksi, maupun masalah sosioemosional pada anak dikemudian hari. Implikasi dari studi ini, orang tua harus dapat menghindari paparan digital media pada anak di bawah usia 2 tahun.*

**Kata Kunci:** penggunaan gadget, perkembangan baduta, PRISMA, sistematis literatur review, smartphone

### ABSTRACT

As social creatures, humans, including children, will constantly be exposed to technological advances. This study aimed to determine the impact of technological advances on the development of children under two years of age. This systematic literature review follows PRISMA guidelines; article collection was completed on March 7 2024, using the Pro-Quest, Science Direct, and Google Scholar databases, with the keywords digital media use and child development 0-24 months. Inclusion criteria were cross-sectional research involving mothers or families with children under 24 months and the use of digital media. Exclusion criteria, incomplete families, and publication before 2020 or after 2023. This study involved ten selected research studies. The results show that exposure to digital media that is too early and lasts a long time is dangerous for children's development; thus, efforts are needed to prevent early exposure to digital media in children under two years so that there is no delay in cognitive development, addiction, or socio-emotional problems in children in the future. This study implies that parents should be able to avoid exposure to digital media in children under two years of age.

**Keywords:** development of toddlers, PRISMA, smartphone, systematic literature review, use of gadgets

### INTRODUCTION

The use of mobile technology is increasing in everyday life, not only for adults but also for children and babies [1], [2]. Based on a survey conducted between 2011 and 2013 among parents, it is known that there has been an increase in mobile digital use by 28% [3]. The results

of this research also follow the 2017-2019 study, which shows that as many as 46-47% of children before the age of 18 are already attached to mobile technology [1], [3]. The study results show that touchscreen technology access among toddlers is relatively high, 71% -89% [4], [5]. Field data also shows that babies and toddlers use mobile devices for long periods. Children aged 2-4 years use mobile devices for an average of 58 minutes daily [3]. Research results also show that as many as 14% of children under 12 months have used mobile digital devices for at least one hour daily [5].

Interestingly, the documented data occurred when AAP recommended no exposure to screen technology for children ages two and under. [6] Apart from that, the research results show a negative impact on children due to exposure to digital screens in the form of traditional passive screens such as watching TV or videos. These activities impact children's cognitive, social, emotional, and physical development. [7]. In contrast to the warnings regarding the use of such media, the use of mobile devices is increasingly supported by a large body of literature, showing potential learning benefits in basic skills (such as literacy and numeracy) when children engage with high-quality interactive software based on layer technology [8], [9]. The AAP's latest recommendations emphasize the importance of parental involvement in monitoring and assisting young children using mobile technology [10].

Touch screen technology is now often being introduced to babies and toddlers, with the assumption that this technology can stimulate sensorimotor development. The introduction of this technology must start by providing babies and toddlers access to computer-based digital devices. Then, with innovation in the development of mobile touchscreen technology, strong and sensitive technology is needed for babies to use [11]. As it develops, the baby will enter the tertiary circular reaction stage. At this stage, the baby will begin to be able to do and try new things [12]. One of the most common actions is babies trying to touch the digital smartphone screen. Babies will learn where, when, and how to manage digital layers to achieve desired results. Babies explore touchscreen technology through a trial and error-process. These activities enable young children to understand how to manipulate objects on the screen. This activity is exciting for babies because it is rich in sensory experiences. High-quality software is needed as babies' exploration abilities, interests, and sensory abilities increase. The display must be designed to be visually dynamic and equipped with auditory stimulation, such as music, bell ringing, or words. The device must also accommodate changes in shape and sound in response to the child's touch. This cellular screen technology's interactive and intuitive features will help babies manage and stimulate them so that children will increasingly enjoy exploring the device.

Smartphones have become an area of focus in everyday life. According to some research results, this is likely to influence the mother's sensitivity and attentional response during mother-infant interactions, mainly if it occurs during childhood when the background foundations of social interaction are just beginning to form. During this period, children need responsive behavior from their mothers. This phase is essential for synchronizing the bio-behavioral system between mother and baby that develops from the beginning of life. This condition will also improve the child's cognitive, social, emotional, and physical development. This nonverbal system includes the dynamic temporal correspondence between maternal and infant affect, intimacy, touch, vocalization, and communicating patterns. At three months, during face-to-face interactions, babies make eye contact with their mothers about 30 to 50 percent of the time. Research also shows that almost all newborn babies see their mother's face. Responsible and attentive parenting will positively impact children's brain development, self-regulation skills, and cognition [14], [15].

Concerns about the exposure of children under 18 months to digital devices need to be reconsidered, although some research suggests that there is no cause for concern [16]. Teaching self-regulation early in the parenting process and encouraging natural behavior patterns (e.g., outdoor play) may be a reliable, developmentally appropriate practice in an era of technological advancement [16]. Given the focus on parents, as facilitators for children's experiences interacting with screen technology, this research examines parent-child interactions

involving technology users with children under two years old (Baduta). The current development of information technology is very beneficial in helping with problems in an activity process, including health services. This condition is due to the increasing demand for information, especially regarding the completeness of data for medical purposes. Computerized technology can act as a communication medium that can speed up human work processes, from data recording and processing to completing and providing accurate information and reporting [17].

There is a high use of information technology in Indonesia, especially smartphones and the Internet. Likewise, the use of social networking media in Indonesia, which reaches 87.13% of internet users, illustrates that information technology has become a part of users' lives. This progress impacts the users and the people around the information technology users, directly or indirectly; even the effect of the development of information technology is capable of revolutionary changes in the collection and dissemination of information and communication for the global community. Several studies discuss the negative side of the development of information technology in Indonesian society. [18] Especially negative impacts on children, including addiction, decreased face-to-face interactions, vulnerability to false and incorrect information, decreased intellectual intelligence, and children's health, religious and moral, cognitive, social and emotional, language, and art problems [19]. Apart from that, many mass media and social networks also spread the news about the negative influence of information technology, especially gadgets, and the Internet, on children, of course playing a role in forming opinions in some Indonesian people that information technology only harms children's development and growth, thus ignoring that it exists. Positive impacts can be obtained from technological developments [18]. This study aimed to determine the impact of technological advances on the development of children under two years of age.

## METHODS

### The Standard of Publication used PRISMA

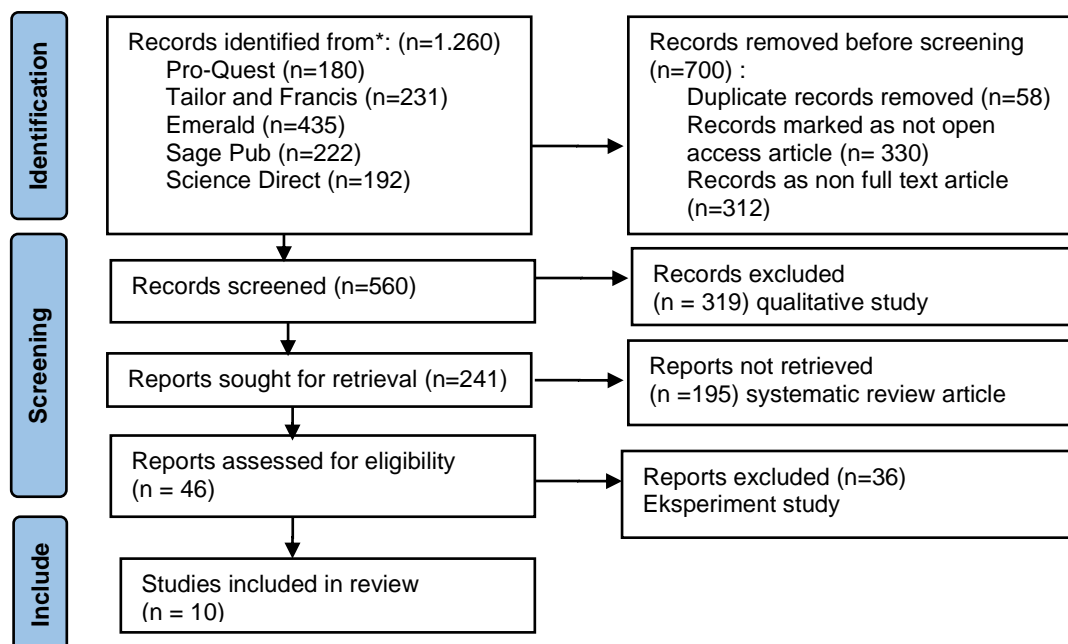


Figure 1. PRISMA 2020 Flow Diagram Template for Systematic Reviews [20]

This research used the PRISMA method, Preferred Reporting Items for Systematic Reviews and Meta-analysis [20], as shown in Figure 1. PRISMA is a standard publication guideline explaining the review process for selected articles and helping authors obtain appropriate and relevant articles [20]. The author begins a systematic literature review by formulating appropriate research questions. Next, the author identified relevant and reliable journal

databases. In obtaining suitable articles, this research includes three main processes: identification, screening, and article eligibility. Inclusion criteria were cross-sectional research involving mothers or families with children under 24 months and the use of digital media. Exclusion criteria, incomplete families, and publication before 2020 or after 2023.

### **Formulation of Research Questions**

PICo was used as a guide for this systematic review to formulate the research questions. PICo helps authors formulate relevant research questions. Key components of PICo include population, phenomenon of interest, and context [21]. Based on these three factors, the author followed the guidelines and instructions. Population is the development of children under 24 months of age and the influence of parenting on digital media advancement (Interests) and worldwide (Platforms), which led the author to develop the main research question - How does parenting in an era of technological advancement affect the development of children under 24 months old across countries?

### **Database Sources**

The researcher used databases from relevant publications in this research, such as Pro-Quest, Google Scholar, and Science Direct.

### **Systematic Search Strategy**

This systematic literature review consists of 3 main stages: identification, screening, and feasibility. The process can be seen in Figure 1.

#### **Identification**

Identification is a keyword search method that includes synonyms, related words, and variations of terms. In this study, the keywords used are digital media in parenting and the child development between 0 and 24 months. In this research, the construction of keywords is based on research questions. Keywords are created according to suggestions from Google Scholar, previously used keywords, and expert opinions. The search string uses Boolean operators, phrase matching, segments, and wildcards. This process provides a broader selection of articles in the database. The author developed relevant keywords throughout the search string in five major databases: Pro-Quest, Google Scholar, and Science Direct. An initial search in ProQuest using the keywords "digital media use" and "child development" found 1,260. After filtering based on full article text, research type, and topic, 618 articles were selected. The selection process began by importing all records into the Mendeley reference management software package and then using the Duplicate Check function to remove duplicate records (n = 58); the search results are still 560 articles.

#### **Screening**

Four hundred thirty-five articles were identified during the initial search. A total of 560 articles were accessible in full text for the following procedure. After the identification stage, the screening process is followed, and a selection process based on inclusion and exclusion criteria is generated automatically based on the sorting function available in the database. Search string data was generated on March 7, 2024. Publication years from 2020 to 2023 were selected as inclusion criteria. The limitation of research in 2020 is that research begins in May 2020, so many articles may still be published after that period. In addition, to maintain the quality of the research, the author limited the articles included in this study to limited document types to journals and empirical study articles. The author also limited the search to only journals and articles written in English to avoid misunderstandings. After filtering the inclusion criteria, 46 articles were obtained. A total of 195 articles were eliminated. Articles from this selection will be exported to an Excel table (CSV) for entry into the eligibility stage.

#### **Eligibility**

Eligibility is the next step in the selection process, done manually by the author. This step was performed to ensure which articles met the inclusion criteria. The author performed this process by reading the titles and abstracts of the 46 selected articles. The results of this process

identified 10 articles relevant to the research question and provided relevant data for all included articles, which were extracted for further analysis.

## RESULTS

### Descriptive Analysis

Throughout 2020-2023, 10 articles met the research objectives, and the cumulative publication is seen in Figure 2. The first publication regarding the impact of digital media advances on child development was published in 2020 by Gabrielle McHarg et al. with the title "Infant screen exposure links to toddlers' inhibition, but not other EF (Executive Function) constructs: A propensity score study" in the UK. The peak number of publications in 2020 was five articles.

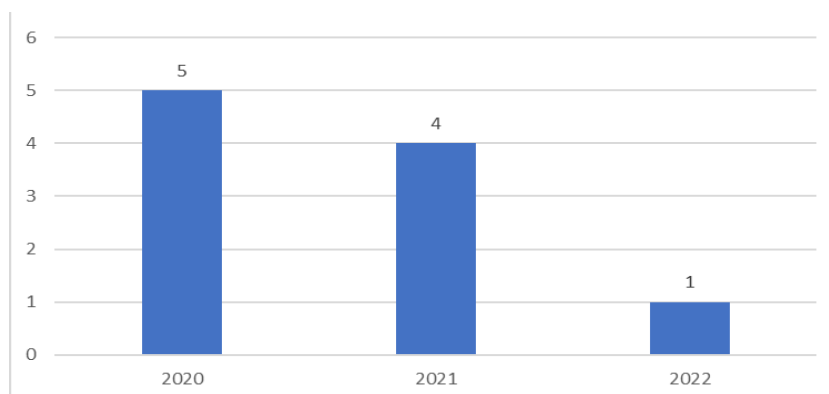


Figure 2. The Cumulative Annual Publication of Digital Media Use In Toddler Development

The US has conducted the most research on technological advances in developing toddlers (see Figure 3). The aspects studied included child development, mother-child bonding/attachment, child behavior, mother-child communication, self-regulation, and length of smartphone use (seen in Table 1). Based on the type of research, the articles included in this literature review included seven cross-sectional studies (70%) and three longitudinal studies (30%) (See Table 4).

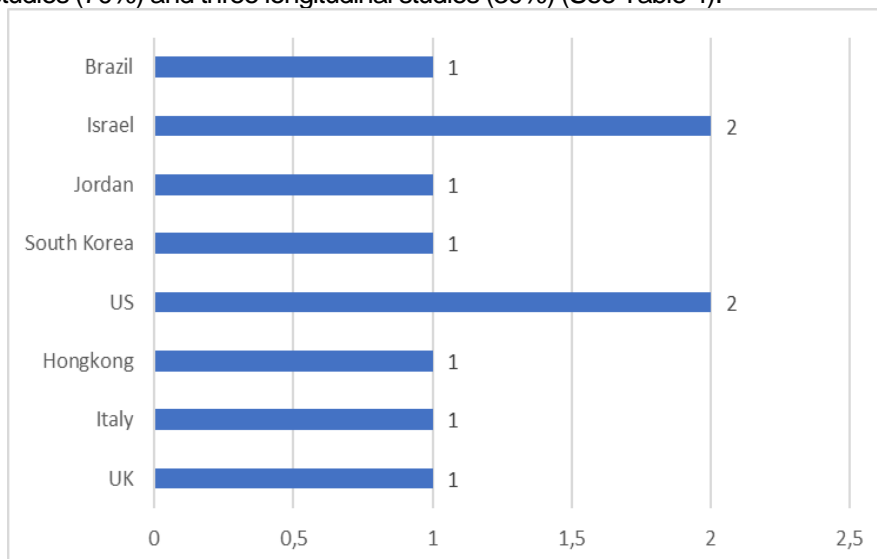


Figure 3. Location of Research on Digital Media Use in The Development of Babies Under Two Years

Based on Table 1, as many as 70% of research shows that the use of digital media technology in the form of touchscreens or gadgets influences child behavior or temperament. However, it was also explained that if technology is followed by good supervision and warm

interaction with parents, it can positively impact the child's learning experience and social development (see Table 2).

**Table 1. Measurement of Children's Aspects**

Children Aspect	n	%
Mother-child bounding	1	10
Length of smartphone use/ Mobile Attachment	2	20
Child behaviour/ Temperament	7	70
Total	10	100

**Table 2. Measurement of Mother/ Family Aspects**

Mother/ Family Aspect	n	%
Mother psychological response/ Mother-child bounding	1	10
Length of Smartphone Use/ Mobile Addiction	4	40
Mobile Use in Daily Parenting	4	40
Family Functions	1	10
Total	10	100

Based on Tables 1 and 2, most research variables focus on child behavior/ temperament (70%). Based on Table 3, most research uses instruments The Infant and Toddler mobile media use (20%) and The Smartphone Addiction Scale (SAS) (20%), Infant Behavior (20%), and The Strengths and Difficulties Questionnaire (SDQ) (20%). The studies in this literature review used various measuring tools to measure digital media use in parenting on child development (see Table 3).

**Table 3. Instruments Used**

No.	Instruments	n	%
<b>The Digital Media Use</b>			
1	The Children's Media Use	1	10
2	Infant and toddler mobile media use	2	20
3	The Mobile Attachment Scale (MAS)	1	10
4	The Smartphone Addiction Scale (SAS)	2	20
5	The Media Emotion Regulation Questionnaire	1	10
6	The Emotional reactivity in the absence of media	1	10
7	The Length Media Use	1	10
8	The Adult Smartphone Addiction Self-assessment Scale (S-scale)	1	10
	Total	10	
<b>Chid Development</b>			
1	The General Health Questionnaire	1	10
2	The Infant-Toddler Symptom Checklist	1	10
3	The Brief Infant Sleep Questionnaire (BISQ)	1	10
4	The State-Trait Anxiety Inventory (short form)	1	10
5	The Strengths and Difficulties Questionnaire (SDQ)	2	20
6	The Problematic Media Use Measure Short Form (PMUM-SF).	1	10
7	The Early Childhood Behavior Questionnaire Short Form (ECBQ-SF).	1	10
8	The Infant Behavior Questionnaire-Revised Very Short Form (IBQ-R)	2	20
	Total	10	

The results of the review of the 10 selected articles can be seen in table 4 below.

**Table 4. Characteristic and Main Findings**

No	Author, Title, Country, Year	Objective	Method/ Design	Finding
1.	Sarah M. Coyne et al.  Tantrums, toddlers, and technology: temperament, media emotion regular, and problematic media use in early childhood [22]  US, 2021	examines the relationship between parental media emotion regulation, temperament, and children's problematic media use.	Cross-sectional Survey to the 269 parents and their children 2 years Sample: Participants were recruited who lived in the Denver Colorado area at Wave 1, and all in- home participants still live in the Denver area. A total of 269 infant-primary caregiver dyads were in home participants. Infants Instruments: 1. Early Childhood Behavior Questionnaire Short Form (ECBQ-SF). 2. Problematic Media Use Measure Short Form (PMUM-SF). 3. Media Emotion Regulation	High media emotional regulation in children is associated with problematic media use and extreme emotions when media is removed.
2.	Lilach Graff N. and Ilanit Gordon  The relationship between maternal smartphone use, physiological responses, and gaze patterns during breastfeeding and face-to-face interaction with infants [14]  Israel, 2021	proved the influence of smartphones on the mother's physiological response and attention to the baby during breastfeeding and interaction	Cross-sectional Sample: Twenty mothers and their 3-6-month-old babies (8 boys; 12 girls—65% firstborn, 30% secondborn, and 5% thirdborn) participation were mothers' normal and corrected vision by contact lenses, and infant age was limited to three to six months.. Instruments: 1. The Smartphone Addiction Scale (SAS) 2. The Infant Behavior Questionnaire-Revised Very Short Form (IBQ-R) 3. The Mobile Attachment Scale (MAS) 4. The Maternal-to-Infant Bonding Scale (MIBS) 5. The State-Trait Anxiety Inventory (short form)	1. When a mother uses a smartphone while interacting with her baby or breastfeeding, there will be decreased eye contact between mother and baby. 2. The degree of maternal smartphone addiction was negatively correlated with baby electrodermal activity during breastfeeding
3.	Elisa Cardoso Azevedo, et. al  Digital Media Use on Interaction Between Mother and Child: Differences in Infants' Early Years [23]  Brazil, 2022	association between sociodemographics and media is used by mothers and babies 0-3 years old	Cross-sectional Sample: This study was composed of 435 Brazilian mothers of infants aged 0-36 months. . These Instruments: 1. Sociodemographics Media use questionnaire: "Zero to Eight: Children's Media Use in America 2013."	1. Mothers will use touchscreen media to accompany their babies when doing household work. 2. As the baby gets older, the duration of media use also increases. 3. Ensuring digital media do not replace interactions between parents and babies is essential
4.	Reem A. Ali	association	Cross-sectional: 114 mothers with	1. Family functions

No	Author, Title, Country, Year	Objective	Method/ Design	Finding
	RN, et.al Examining the associations between smartphone use and mother-infant bonding and family functioning: A survey design [24]	between Excessive smartphone use with mother-infant bonding, family functioning, and Maternal mental health in Jordan	infants were interviewed in person and completed a web-based questionnaire Instruments: 1. demographic variables 2. Smartphone Addiction Scale (SAS) 3. Maternal bonding: Mother-to-Infant Bonding Scale (MIBS) 4. Family Assessment Device (FAD). 5. Depression, Anxiety and Stress Scale (DASS-21)	will become unhealthy due to excessive use of smartphones. 2. limiting smartphone use are recommended as preventative measures..
5.	Jordan, 2020 Bomi Kim et al. The relationship between Mothers' smartphone addiction and children's smartphone usage [25]	tested the effect of mothers' addition of smartphones on their children's smartphone use	Longitudinal: prospective cohort study samples: mothers of 400 children aged two from three cities (Suwon, Goyang, and Seongnam). Sample: 114 mothers of infants who possessed smartphones for personal use Instruments: 1. The Adult Smartphone Addiction Self-assessment Scale 2. the Parenting Stress Index Short Form (PSI-SF), Beck Depression Inventory-II (BDI), and Beck Anxiety Inventory (BAI)	1. Mothers who experience smartphone addiction are associated with earlier exposure to smartphones in children. 2. Smartphone addiction in children harms various aspects of development, emotional, rational, cognitive, and social aspects.
6.	South Korea, 2021 Laura. E. Levine et al. Mobile media use by infants and toddlers [1]	examined mobile media usage patterns by infants and toddlers from a family media ecology perspective	Cross-Sectional Sample: parents with children under 36 months, recruited nationally via online survey services (N=226) and locally (N=100) Instruments: 1. Infant-Toddler Symptom Checklist 2. Parental Motivations Scale (PMS) 3. Infant and toddler mobile media use	The use of mobile media in babies and toddlers is related to parents' motivation to use mobile media. It will be easier for them to give mobile media to their children and have a greater chance of having children with self-regulation difficulties.
7.	US, 2020 Yehuda Bar Lev and Nelly Elias Digital Parenting: Media Uses in Parenting Routines during the First Two Years of Life [26]	The research aims to examine the use of digital media during the infant-toddler period and how it contributes to excessive exposure to digital media in the first two years of a child's life.	Longitudinal Sample: Ten families with three-month-old children, followed by two-year-old children. The data collection method was done by observation and interviews with parents. Instruments: 1. Observation sheet 2. Interview guide	1. Parents extensively expose their children to digital screen devices in their daily parenting routine. 2. Use digital media in parenting routines in long-term will increase the negative impact on child development
	Israel, 2020			



No	Author, Title, Country, Year	Objective	Method/ Design	Finding
8.	Rosa S. Wong et al.  Parent Technology Use, Parent-Child Interaction, Child Screen Time, and Child Psychosocial Problems among Disadvantaged Families [27]  Hong Kong, 2020	Understand the relationship between parental technology use, parent-child interactions, mobile technology usage time, and children's psychosocial difficulties among disadvantaged families in Hong Kong.	Cross-Sectional Sample: 1,254 Parents of 3-year-olds from the KeySteps@JC project Instruments: 1. the number of hours their children used mobile digital each day 2. the Strengths and Difficulties Questionnaire	1. Parental interference with technology during parent-child interactions was a fully mediating variable between parental problematic use of digital technology and duration of child screen use 2. Problematic use of digital technology by parents is positively and directly related to children's psychosocial difficulties
9.	Francesca Bellagamba, et.al.  How Infant and Toddlers' Media Use Is Related to Sleeping Habits in Everyday Life in Italy [28]  Italy, 2021	Analyze the relationship between media use and children's sleep habits	Cross-Sectional Sample: Online survey to the 264 Italian parents who had at least one child aged 8–36 months Instruments: 1. Media Assessment 2. Sleep Inventory: the Brief Infant Sleep Questionnaire (BISQ) 3. Parental Stress: Parental Stress Indeks	1. Infants have high levels of digital media exposure 2. Differences in the length of digital media use patterns are associated with sleep patterns 3. Digital media use is related to children's sleep patterns
10.	Gabrielle McHarg, et.al.  Infant screen exposure links to toddlers' inhibition, but not other EF (Executive Function) constructs: A propensity score study [29]  UK, US, Netherlands, 2020	Analyze relations between electronic screen-based media use in infancy and executive function in early toddlerhood	longitudinal study Sample: 474 couples at local hospitals in the East of England and New York City and the Netherlands Instruments: 1. The Infant Behavior Questionnaire-Very Short Form (IBQ) 2. Parent well-being: the General Health Questionnaire 3. Couple's satisfaction: the Couple's Satisfaction Inventory 4. The Self-Efficacy in the Nurturing Role scale	1. There appear to be specific relations between early screen exposure and later inhibition; these relations are not linear but suggest that any regular exposure to screens may be detrimental 2. Early exposure to screen-based media adversely impacts children's executive function development.

## DISCUSSION

This research aims to systematically review empirical studies on the impact of technological advances on the development of children aged 0-24 months. Most previous research shows that technological advances influence the development of toddlers. The impact can be positive or negative depending on how technological advances are utilized. Technology can be developed to detect and provide education regarding the development of toddlers; technology can also be used as a communication medium, such as telecounseling. Such benefits positively impact the development of toddlers and reduce the prevalence of toddler health problems [30], [31].

Kim's research results showed how much influence caregivers or parents have on the development of toddlers. Children who have mothers with gadget addiction tend to be at risk of being exposed to gadgets at an early age and also experiencing gadget addiction. Maternal smartphone addiction is linked to early smartphone exposure in children. Smartphone addiction negatively affects children's emotional, rational, cognitive, and social development. The family, parenting style, and caregivers influence children [25]. This condition happens because the family is the closest environment to children under five.

The research results showed the negative impact of gadgets on early childhood language development: disrupts children's expressive development, inhibiting the introduction of the mother language; children are unable to communicate non-verbally; and gadgets do not encourage children to use eye contact when interacting with other people. Gadgets can hinder language skills (children used to gadgets tend to be quiet, often imitate the language they hear, close themselves off, and are reluctant to communicate with friends or their environment)[19].

A well-functioning family will, of course, be able to make reasonable regulations for all family members, including rules and commitments regarding using gadgets. Ali's research shows that excessive smartphone use in children is associated with unhealthy family functioning [24]. So, parents allow their children to be exposed to technological advances without supervision and clear boundaries, which can negatively impact their development. This finding aligns with Bellagamba's research, which states that too much technological media can disrupt toddlers' sleep patterns [28]. Cyone even said that excessive use of gadgets can affect children's emotional problems, and it is not uncommon for children to have tantrums when parents try to reduce gadget use [22].

Technology directly affects children's development, and several studies have found that technological advances affect caregivers or parents, influencing parenting patterns and mother-child interactions. This explanation aligns with Nakagawa's research results; it is common for mothers who breastfeed but still use their cellular devices. The mother's response to the breastfed baby is slower [32]. For this reason, the use of digital media must be minimized in favor of face-to-face interaction between parents and babies. Ensuring digital media do not replace interactions between parents and babies is essential [23].

Technological advances can positively impact babies' physical well-being [30]; in Ando's research, technological advances are realized in the health world's efficiency through teleconsultation, where mothers can carry out remote consultations using existing technology. Teleconsultation that has been carried out can reduce the prevalence of atopic dermatitis in babies. As humans, we cannot stop ourselves from technological progress, like babies and toddlers. If technology is used unwisely, it can have many negative impacts, especially on children. However, when parents engage with babies and toddlers when using technology, they can maximize children's learning and social development [33].

In Kitsao's research, technological advances were directed at developing technology for monitoring children's growth and development, and it turned out to be effective in optimizing children's development. So, it can be concluded that the massive use of technology can help facilitate the growth and development of children, as well as the knowledge and practices of caregivers [31]. Nomkin and Ilanit's research in Japan is quite interesting. This study made direct observations of how mothers breastfeed with and without gadgets. Research results

show that the mother's level of smartphone addiction is negatively correlated with electrodermal activity during breastfeeding. The degree of maternal smartphone addiction was negatively correlated with electrodermal activity during breastfeeding [14]. So, if a mother experiences smartphone addiction, there will be decreased stress during eye contact while breastfeeding. The electrodermal activity sensor measures the electrical properties of the skin as an indicator of the amount of sweat on the skin. Sweat levels can reflect sympathetic nerve activity in various conditions, such as stress, emotional arousal, and cognitive load. Electrodermal activity in psychology is used to indirectly measure sympathetic nervous system activity that arises due to psychological activities such as emotional arousal, cognition, and stress responses [34].

Early exposure to screen-based media adversely impacts children's executive function development [29], which is then related to changes in children's sleep patterns [30]. Digital media must be used appropriately, and parents should heed recommendations regarding limiting smartphones in their baby's early years of development [35]. Past studies show that higher mobile digital use by parents is associated with reduced parent-child interaction, increased time spent using digital media in children, and psychosocial difficulties in disadvantaged families [27]. Parents with small children need to take preventive action so that their use of smartphones does not cause adverse impacts [36] to avoid children with self-regulation difficulties [1]. For children to stay healthy and safe, regulations are needed to regulate the use of smartphones within a certain period [25]. Raising awareness and limiting smartphone use are recommended as preventative measures [24]. Parents should avoid media as the primary tool for regulating children's emotions because this will impact media use strategy problems for babies [22]. It is recommended that parents' awareness of the negative impact of using digital media in parenting routines on long-term child development be increased [26]. The presence of a loving caregiver is essential for physical and emotional development; it is a must for ensuring digital media do not replace interactions between parents and babies is essential [23].

## CONCLUSION

Studies have provided significant evidence linking parenting in technological advances to developing toddlers. Although the AAP continues to advise against the independent use of screen technology for babies and toddlers, humans cannot be isolated from technological advances. The technological advances that are used excessively, where children are left to use gadgets alone, or even parents are addicted to gadgets, will harm children's development, such as changes in sleep patterns, lack of parent-child interaction, behavioral disorders, and gadget addiction in children. There are indications that smartphone use in parenting impacts parental sensitivity and responsiveness. Raising awareness and cut off the digital media use are recommended as preventative measures. Early exposure to screen-based media adversely impacts executive function development in children under 24 months. This study implies that parents should be able to avoid exposure to digital media in children under two years of age.

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