

Mindful Media: Exploring Parents' Awareness and Beliefs on Gadget Use in Early Childhood (0-3 Years)

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Abstract

This study examined Malaysian parents' knowledge, beliefs, and misconceptions regarding the use of handheld gadgets among children in the age group of 0-3 years, which is considered a crucial period for cognitive, socio-emotional, and language development. A qualitative research design guided data collection through in-depth, semi-structured interviews with eight parents recruited by purposive snowball sampling. Thematic analysis, based on Braun and Clarke's framework, yielded three key findings. First, parents expressed moderate to high levels of awareness regarding the potential developmental risks of early gadget exposure; however, their understanding remained largely superficial and was acquired through social media rather than from any professional guidance. Second, parents believed that gadgets were useful for promoting early cognitive development, especially in terms of acquiring English vocabulary and basic numeracy skills; however, they often failed to make distinctions between active, educational engagement with screen media and the merely passive consumption of screen content. Third, several misconceptions arose, such as that gadgets can pacify children without developmental consequences, that watching educational videos constitutes learning, and that screen time may replace caregiver interaction. These misconceptions clearly reveal a gap between parental perception and evidence-based principles of child development. The findings of this study emphasize that structured digital parenting education, culturally relevant awareness programs, and clear guidelines are definitely required for parents of infants and toddlers to ensure the appropriate, mindful use of digital media during the early years.

Keywords: Parents, Awareness, Beliefs, Gadget Use, Early Childhood

Introduction

Morphing to today's digital era, handheld gadgets such as smartphones and tablets have become essential tools in everyday life. These portable devices are widely used for communication, entertainment, information access, and even managing family routines and children's activities. According to Abdul Wahab et al. (2021), digital gadgets have played a positive role in enhancing productivity and connectivity, supporting both personal and professional aspects of modern living. However, when it comes to very young children, particularly those aged 0 to 3 years, these devices require careful and informed use. At this early developmental stage, unrestricted exposure to gadgets may do more harm than good. The World Health Organization (2019), ~~for instance,~~ recommends no screen time for children under two years old, emphasizing that real-world human interaction is far more beneficial for their cognitive, language, and emotional growth. Datuk Dr. Amar-Singh HSS, an expert in early childhood and special needs in Malaysia further coincides this stating that extensive screen time for children under two or three years can significantly impact their human interaction causing delayed cognitive development leading to speech impairment (Daily Express, 2020).

Although handheld devices are valuable tools in many situations, the usage among newborns and toddlers raises growing developmental concerns. Excessive or unsupervised screen exposure in early childhood has been associated with a variety of negative outcomes. Studies show that too much screen time may interfere with language acquisition, reduce attention span, and disturb sleep quality (OECD, 2021, Radesky et al., 2015). This is worrisome because children aged 0 to 3 learn best through direct, real-world interaction with caregivers and their surroundings not through passive digital input (OECD, 2021). In such cases parental involvement becomes crucial. A local Malaysian study by Tan and Zhooriyati (2021) found that parents not only hold positive attitudes toward digital media usage but also apply intervention strategies such as selecting content and setting time limits to ensure media usage is more guided and meaningful rather than just passive screen time. By supervising, limiting, and co-engaging with digital content, parents can turn screen time into more meaningful learning experiences (Saminder Singh, et al., 2025). This coincides with Zaman et al.'s (2016) that when parents actively guide their children's media use, they can help minimize risks and improve engagement and understanding through shared interactions.

If on the one side is the concern on digital use by toddlers, the other end is concern on parental awareness of appropriate digital use. Parental awareness about the impact of gadget use during early childhood varies widely around the world. A large-scale survey in the United States by Wartella et al. (2014) found that while most parents allowed their toddlers to use digital devices, many lacked accurate knowledge about age-appropriate screen use. Nearly 60% of parents believed educational apps and videos had positive learning outcomes, despite limited evidence supporting their effectiveness for children under the age of three. This gap between parental belief and scientific evidence reflects a global challenge parents may have good intentions, but without proper guidance, they risk unintentionally overexposing their children to digital content (Morawska et al., 2023).

Despite growing global attention on screen time and early childhood development, there is still limited research in Malaysia focusing specifically on parents' awareness and

beliefs regarding handheld gadget use. A study by Abdul Hadi et al. (2022) highlights that many Malaysian parents may not fully understand the potential developmental risks linked to early and unsupervised gadget exposure. Cultural habits, demanding lifestyles, and a lack of accessible parenting resources may contribute to this lack of awareness. Without localized data on how Malaysian parents perceive and manage screen use, it becomes difficult to develop effective guidelines, education campaigns, or support programs. Understanding parental awareness in Malaysia is not only necessary for enriching academic research it is also vital for informing child development policies, digital parenting strategies, and early childhood health interventions nationwide. A study by Joginder et al. (2021) titled *'Malaysian Parents' Perception of How Screen Time Affects their Children's Language'*, researchers found that while many parents believe screen time benefits children's language development, most also started exposure before 18 months and exceeded recommended time limits underlining the importance of local data to guide policy, design parental guidelines, and support early childhood health initiatives. Joginder et al. (2021) points out the need to increase Malaysian parents' awareness about screen time limits for their children and also about positive screen viewing practices.

The first three years of life are a critical phase in brain development, during which foundational skills in speech, social interaction, and emotional regulation are rapidly forming (Shonkoff & Phillips, 2000). Inappropriate or excessive exposure to handheld gadgets during this window can interrupt these developmental processes, increasing the risk of language delay, attention problems, and poor self-regulation (Madigan et al., 2019). This makes it essential for parents to understand the long-term consequences of early screen exposure. Studies warn that children who develop screen dependency at a young age may face challenges in behavior, learning, and communication as they grow older (Radesky et al., 2015). While handheld gadgets can provide value when used thoughtfully, the issue is not one-dimensional. As Zaman et al. (2016) explain, finding the right balance between educational benefits and developmental risks requires mindful parenting, structured use, and cultural sensitivity.

Social Learning Theory (Bandura, 1977)

According to **Social Learning Theory (Bandura, 1977)**, children under the age of three learn primarily by observing and imitating the behaviours they see around them. When toddlers are repeatedly exposed to screens such as smartphones and tablets, they absorb the language, actions, emotional reactions, and problem-solving patterns displayed on digital media. As a result, they may imitate unacceptable behaviours, repeat phrases that are not appropriate or accurate linguistically and develop non-familiar understanding of the world. Repetitive or overstimulating content can further shape their attention span, emotional regulation, and social habits. Thus, Social Learning Theory helps explain how early screen exposure influences behavioural, cognitive, and social development during the most sensitive years of growth.

Problem Statement

In the era of rapid digitalization, handheld gadgets such as smartphones and tablets have become deeply integrated into family life, including the routines of very young children. While global health authorities such as the World Health Organization (2019) have emphasized the risks of early screen exposure, many parents continue to introduce gadgets to children before

the age of two. Although various international studies have shown that this early exposure can affect children's language, attention, and social development if not properly managed (Wartella et al., 2014; Radesky et al., 2015), within the context of Malaysia, research focusing specifically on parents' awareness, beliefs, and misconceptions about gadget use for children aged 0–3 years remains scarce. Existing studies (Abdul Hadi et al., 2022; Tan & Zhooriyati, 2021) indicate that while parents recognize both the benefits and risks of digital media, many still lack detailed understanding of its developmental implications. This gap in awareness, coupled with lifestyle demands and cultural attitudes that normalize early gadget use, raises concern about how well parents can balance convenience with healthy developmental practices.

Therefore, this study seeks to address this gap by exploring Malaysian parents' awareness, beliefs, and misconceptions regarding handheld gadget use among children aged 0–3 years. Through this understanding, the study aims to provide insights that can inform digital parenting education, child development policy, and awareness initiatives within Malaysia.

Aim of the Study

The aim of this study was to examine how Malaysian parents of children aged 0 to 3 years perceive and understand the use of handheld digital gadgets such as smartphones and tablets in early childhood. Specifically, this study seeks to answer the following research questions:

1. What is the level of parents' awareness regarding the developmental impacts of gadget use on newborns and toddlers?
2. What role do parents believe gadget plays in early childhood cognitive development?
3. What misconceptions do parents hold about the role of gadgets in early childhood development?

By answering these questions, the study aims to contribute new insights into how parental understanding influences gadget exposure during this critical developmental period, and to support future efforts in education, policy, and early childhood health promotion.

Research Methodology

Research Design

Due to the exploratory nature of this study, a qualitative methodology through in-depth interview was adopted to exploring parents' awareness, beliefs, and misconceptions about gadget use among toddlers aged 0–3 years.

Population and Sampling

This study employed a snowball sampling, specifically a purposive snowball sampling strategy as it guaranteed that participants possess rich, firsthand experiences related to the phenomenon under investigation (Creswell & Poth, 2018). Through this method, initial participants who met the inclusion criteria were invited to recommend other individuals with similar relevant experiences, allowing the sample to expand progressively like a "snowball." This strategy ensured that all selected participants possessed meaningful knowledge and direct involvement with the topic, thereby strengthening the depth and quality of the data collected (Creswell & Poth, 2018). In total, 8 parents agreed to participate in this research.

Research Instrument

The interview guide (Table 1) consisted of five questions which was solely self-designed to answer the three research questions in this study. The first two interview questions were solely on the parents and the child's demographic, education and child's frequency of frequency of gadget use. Question 3 was designed to capture parents' awareness regarding the developmental impacts of gadget use whereas Question 4 probed further on role do parents believe gadget use plays in early childhood cognitive development. Question 5 was designed to focus on misconceptions parents hold about the role of gadgets in early childhood development.

Table 1

Description for each question in the Interview Guide

Question	Description
Question 1	Parents' and child's demographic
Question 2	Frequency of gadget use
Question 3	Parents' awareness regarding the developmental impacts of gadget use
Question 4	Parents' view on the role of digital gadget use in early childhood cognitive development.
Question 5	Misconceptions parents hold about the role of gadgets

Data Collection and Analysis

For this study, data were collected through in-depth interviews with parents, an approach well suited for capturing detailed insights into their experiences (Seidman, 2013). Interviews were conducted at convenient times and locations, lasted approximately 20 minutes, and were audio-recorded with informed consent. After transcription, participants reviewed their verbatim transcripts through a member-checking process to ensure accuracy and enhance credibility (McKim, 2023; Mero-Jaffe, 2011). The data were analysed using Braun and Clarke's (2006) thematic analysis. Themes were developed through repeated close reading of transcripts and guided by the study's objectives, followed by the construction and refinement of a thematic chart. To strengthen reliability, Denzin's (2012) principle of investigator triangulation. Was used where each researcher coded the data independently before comparing and refining interpretations.

Reliability and Validity of Qualitative Data

A critical concern in qualitative research is the accuracy, completeness, and correspondence among data collected and that occurred in the study setting (Bogdan & Bicklen, 2007). In light of this, making the current research more reliable involved adherence to a systematic, step-by-step, and traceable approach to data analysis (Krueger & Casey, 2000). Reliability was further enhanced by the accurate transcription of interviews, consistency checks in coding, and member-checking to verify verbatim transcripts. Validity, one of the qualities of qualitative research, is based on trustworthiness, authenticity, and credibility (Creswell, 2009). In this study, validity was achieved through confirmation that the sample chosen was fittingly serving the purposes of the research and provided through constant feedback in the process. Members were asked to check their transcripts after every interview through member-checking. This gave the parents an opportunity to clarify what they meant, to identify and correct any errors, and to add more information if necessary. According to

Creswell (2007) and Merriam (2009), member-checking is one of the most important strategies to ensure the validity as well as credibility of qualitative findings.

Findings and Discussion

This section presents the findings of the qualitative interviews conducted with eight parents of children aged 0–3 years. The aim was to explore parental awareness, beliefs, and misconceptions about gadget use among very young children. The discussion is organized based on the three research questions.

Research Question 1:

What is the level of parents' awareness regarding the developmental impacts of gadget use on newborns and toddlers?

Based on the interviews, parents demonstrated a moderate to high level of awareness about the potential developmental impacts of gadget use during early childhood. Table 2 indicates each parent's level of awareness in detail.

Table 2

Parent's level of awareness on gadget use

Parent	Level of awareness
Parent 1	High
Parent 2	Moderate
Parent 3	Moderate
Parent 4	Moderate
Parent 5	Moderate
Parent 6	High
Parent 7	High
Parent 8	High

All parents recognized that excessive exposure could negatively affect toddlers' behavior, attention span, and emotional regulation. Figure 1 below illustrates parents expression of caution and enforcement of various rules or limits on screen time.

"No phone during weekdays or family time." (Parent 1)

"He can use phone only after chores." (Parent 6)

after homework saturday only
weekend 30 minutes before bedtime
after chores Friday only 15 minutes daily
after homework saturday only weekend
before bedtime 30 minutes
after homework after chores

Figure 1 Expression of caution and enforcement of various rules

Several parents, especially those with prior experience or professional awareness, understood that toddlers learn primarily through real-world interaction. They acknowledged that early reliance on gadgets could interfere with social and emotional bonding. However,

awareness was mostly personal and experiential, not based on formal guidance or expert advice.

5) *"I learned from Facebook that gadgets can be dangerous for toddlers." (Parent 5)*

"No, where I got get training. I learn from Tik-tok. Sometimes it is scary to see what gadget do to chidlren." (Parent 8)

Findings found that there were no compulsory classes or training for parents on developmental effects of gadget use. Parents relied on social media, peers, and online articles for information. Hence, those parents with high conscious will get serious on this, while normal ones will just follow with the flow. This highlight how **parental attitudes, rather than expert knowledge continue to shape digital parenting practices** in early childhood. The indication that parents are aware of the possible developmental effects clearly indicate that their understanding is surface-level and self-taught rather than evidence-based. Basically, findings point out that parents are aware that gadgets affect early development and act accordingly by setting boundaries, but their knowledge lacks depth and professional reinforcement.

These findings are consistent with earlier research in the region and globally. As in Mansor et al. (2021), findings showed that parents in that study were aware of possible behavioural and emotional effects, but their knowledge tended to be informal and was largely driven by personal experience rather than expert recommendations. This is consistent with the findings of Radesky & Christakis (2016), who found that parents tend to rely on social networks, online sources, and observational learning rather than evidence-based guidelines in making decisions about children's screen use. Similarly, studies in Singapore and Indonesia reveal that parents are generally aware of developmental risks but often fail to translate their awareness into informed digital parenting practices due to competing online information and the lack of structured parental education programs (Chiong et al., 2021; Novitasari & Rahmawati, 2022). This study further supports the work of Epstein et al. (2020) in emphasizing the tendency for professional knowledge to be considerably outweighed by parental attitudes in dictating screen-time regulation, leading to rules based more on intuition rather than developmental science. Overall, even as parents agree that gadgets can impact early learning, attention, and social-emotional development, their understanding remains superficial, highlighting the need for more structured support, policy guidance, and accessible parental training.

Research Question 2:

What role do parents believe gadgets plays in early childhood cognitive development?

Most participants viewed gadgets as having some educational and cognitive benefits, particularly in enhancing language learning and communication. Many noticed improvements in their toddlers' ability to speak, recognize numbers, or imitate English phrases from videos.

"He speaks English well after using the tablet, especially watching YouTube Kids, because both of us don't speak English much." (Parent 2)

"She catches a lot of new words, especially through English games like DuoLingo." (Parent 4)

Most parents (75%) believed that controlled exposure to educational content can stimulate early learning and support curiosity. This finding shows that parents perceive gadgets as tools

for informal learning, especially when children lack exposure to English or structured learning at home.

However, some parents (25%) admitted that they used gadgets not just for learning but as a means to occupy or calm their toddlers which indirectly supports cognitive engagement but also risks passive learning. Previous research has shown that **passive screen exposure** such as when children watch videos without interaction is associated with **poorer phonological memory and reduced cognitive stimulation**, compared to active engagement with caregivers or interactive content (Rachmadtulla et al., 2021). This supports the notion from Singh that **unstructured or unsupervised gadget use** may limit developmental benefits for very young children.

Parents generally perceive gadgets as helpful supplements for early learning, especially for language exposure, but they do not differentiate between active learning (interaction) and passive screen exposure (watching alone). The findings indicate that parents generally perceive gadgets as having a positive influence on early cognitive development, particularly in relation to language acquisition and foundational literacy skills. Many parents reported noticeable improvements in their toddlers' ability to understand and imitate English vocabulary, aligning with recent studies showing that high-quality digital media can enhance early language skills when used in moderation (Neumann & Neumann, 2023). Parents' observations that applications such as YouTube Kids and DuoLingo support vocabulary growth mirror evidence that interactive and linguistically rich digital content can scaffold children's expressive and receptive language development, especially in multilingual households (Cheung & Poon, 2023).

A majority of parents (75%) believed that controlled exposure to educational apps and videos stimulates curiosity, attention, and early cognitive processing, suggesting that they view gadgets not only as entertainment devices but as informal learning tools. This perception is consistent with findings by Papadakis (2023), who argues that developmentally appropriate digital applications can promote early problem-solving, memory building, and concept recognition when parental mediation is present. In households where parents feel less confident in English proficiency, digital tools are also perceived as compensatory resources that provide linguistic input otherwise unavailable in the home environment.

However, the responses also reveal that a substantial minority of parents (25%) use gadgets primarily as a soothing or babysitting tool, which may inadvertently shift children toward passive consumption. Passive screen exposure—such as prolonged video watching without adult interaction—has been linked to weaker executive functioning, slower processing speed, and reduced working memory performance (Madigan et al., 2024). These concerns reinforce earlier findings by Rachmadtulla et al. (2021) that passive digital engagement offers limited cognitive stimulation compared to interactive or co-engaged learning experiences.

Moreover, parents in this study did not clearly distinguish between active digital learning (e.g., interactive apps, guided parent-child use) and passive screen time, a gap also highlighted in recent international research. A 2024 review by Dardanou and Greenfield notes that caregivers often conflate different types of digital engagement, leading to overestimation of educational value when content is not interactive or scaffolded by an adult.

This conceptual ambiguity affects how gadgets are integrated into children's daily routines, potentially limiting developmental benefits.

Overall, the findings suggest that while parents view gadgets as beneficial supplements—especially for language exposure and early cognitive stimulation—the developmental gains depend heavily on how the devices are used. Without intentional parental mediation, clear boundaries, and interactive engagement, the positive cognitive effects of digital tools may not be fully realized. These insights highlight the need for greater parental awareness of evidence-based digital practices, ensuring that gadgets function as purposeful learning aids rather than passive entertainment devices.

Research Question 3:

What misconceptions do parents hold about the role of gadgets in early childhood development?

Based on the data analysis, all parents provided mixed reactions to role of gadget t an early stage of a child.

"She became calmer when watching her phone." - Parent 3

"Not a problem for me. Different kids need different exposure." - Parent 5

"Well, with gadget, I saw better specch, maybe?" - Parent 7

" Not advisable, I guess. But sometimes can't avoid." - Parent 8

Some (60%) believed that gadgets do provide quick positive outcomes, such as better speech or calm behavior without realizing that the "believed positivism" overlooked the long-term developmental risks.

"Yes, I actually never thought...I realize now that her behaviour starts to have problems whenever I took away the gadgets." - Parent 3

"I realise this now that she doesn't want to learn much if there is no gadget and this slows her learning." - Parent 7

This finding is parallel to a Malaysian study which found that children under five with excessive screen time had significantly higher risks of developmental delay, attention and hyperactivity problems, and impaired exploration of their environment (Toh et al., 2022).

Another misconception was that gadgets can replace real-life relationships, serving as 'helpers' or 'companions' when parents are busy to teach and care for heir toddlers. This reflects a misunderstanding among parents being unaware that early brain and emotional development relies on sensory and social interaction, not screen input. A study by Jalil et al. (2023) further proves that such use of gadgets may reduce child–parent interaction and be associated with poorer development outcomes.

Finally, parents often linked educational videos with genuine learning, without realizing that learning in early childhood is multisensory and relational, not solely linguistic or visual. A Malaysian study among children aged 6–36 months found that both the age at which screen exposure began and the duration of screen time were significantly correlated with delays in communication, motor, problem-solving and social skills (Zain et al., 2023). This demonstrates that what some parents view as harmless gadget use or a 'helper' or 'companion' for toddlers may in fact carry hidden developmental risks.

On the whole, parents tend to overestimate the educational value of gadgets and underestimate the developmental cost of early exposure. Their misconceptions stem from convenience, lack of expert guidance, and the normalization of digital parenting.

Conclusion

In conclusion, this study sheds light on the nuanced realities of Malaysian parents' awareness, beliefs, and misconceptions about gadget use among children aged 0–3 years. While parents generally recognize that early and excessive gadget exposure can disrupt children's social and cognitive development, their understanding remains largely experiential and influenced by online sources rather than grounded in professional guidance. The belief that gadgets enhance early learning, particularly in language acquisition, coexists with misconceptions that passive screen exposure is equally beneficial, or that gadgets can substitute for caregiver interaction. These findings reveal an urgent need for structured parental education programs and culturally relevant awareness campaigns to guide families toward mindful media practices. Encouraging co-viewing, limiting passive use, and reinforcing the irreplaceable value of human interaction in early development will be key to supporting healthier digital environments for Malaysia's youngest learners.

Significance of Study

This study holds importance for several reasons. First, it contributes to the growing body of knowledge on the role of digital media in early childhood, particularly within the Malaysian context where research on children below the age of three remains limited. By focusing on parents' awareness, roles, and misconceptions, the study offers deeper insights into how parental understanding and everyday decision-making shape the management of gadget use in early childhood. Second, the findings will be valuable for parents and caregivers, as they provide opportunities to recognize both the benefits and risks of handheld gadget use in early childhood. Increased awareness may encourage more mindful media practices at home, supporting healthier development for children.

Third, this research offers practical implications for educators and pediatricians, who can draw on the insights to design targeted parent education programs, awareness campaigns, or guidelines that address misconceptions and promote balanced approaches to digital media. Finally, by adopting a qualitative approach, the study captures the voices and lived experiences of parents, highlighting the complexity of their beliefs and practices. Such narratives enrich the understanding of early childhood development in the digital age and set a foundation for future studies.

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