Frequent Use of Mobile Devices and its Impact on Early Childhood

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Abstract

The study consists of a systematic review, where the objective was set: to analyze the impact of the use of mobile devices in early childhood, answering the following questions: What is the frequency of the use of mobile devices in early childhood? What is the impact of frequent use of mobile devices in early childhood? Scientific productions from the SCOPUS, Web of Science, Gale OneFile Psychology and ProQuest databases were analyzed, publications made from 2020 to 2023. The study is based on the PRISMA methodology, which consists of a flow diagram that allows selecting the studies for their construction (Higgins and Green, 2011), which have allowed the methods and techniques of the studies to be systematized in an organized way. The reviewed productions provide empirical and theoretical data in the field of psychology and social sciences. The results reveal that 22.7% of 18-month-old children and 94.6% of 5-year-old children use the mobile device 60 minutes a day. High levels of mobile device use at the age of 5 years are associated with hyperactivity, difficulties with attention, concentration and behavioral problems. Frequent mobile device use at the age of 18 months can cause many attention difficulties because they are susceptible to external experiences and excessive media use that can hinder development in attention networks.

Keywords: Mobile devices, early childhood, screen time, social impact.

1. Introduction

The World Health Organization points out that children under two years of age should not watch television or be exposed to screens. The time spent using mobile devices should be a maximum of one hour a day, and if possible less time, the better (United Nations Organization, 2019).

Frequent exposure to mobile devices generates symptoms of dependence and withdrawal, which would result in school absenteeism, aggression, and poor academic performance (Celis el tal, 2022). According to Common Sense Media, cited by Delgado (2019), students who frequently use mobile devices are at risk of developing attention deficit hyperactivity disorder (ADHD), however Pew Research Center (2018) mentions that the effects of using Mobile devices have generated anxiety in 42% of students and depression in 49%.

Ecuador is the fifth country in statistics for the use of mobile devices, with an annual growth of 75% and according to MinEduc, since 2014 their use for pedagogical work has been regulated (Terán et al, 2019). According to Pino et al (2018), thecell phone use is a distractor for students, where86.4% use cell phones for non-academic purposes, 77.9% recognize their dependence on cell phone use and 50% are distracted by the sound.

Frequent use of mobile devices at an early age is very common, according to Niiranen et al, (2021) 94.6% of 5-year-old children use the mobile device for more than 60 minutes a day. The study carried out by Stamati et al (2020) indicates that children have their own mobile device at the age of 3, this is confirmed by the study carried out byDomoff et al, (2020) stating that between a third and a quarter of 4-year-old children already have their own cell phone.

The types of uses they give to mobile devices in childhood, Rideout and Robb (2019) cited byDomoff et al., (2020) reveal that between 2015 and 2019, digital video viewing and television broadcasting have doubled with an increase of five hours per week. The most used applications are Netflix, Hulu and YouTube Kids. The content created by YouTube is gameplay videos, challenges, “let's play” instructional videos, and other mobile applications and interactive platforms.

Frequent use of mobile devices could interrupt children's social learning, because they limit direct social interactions and family ties. Studies show that infants who frequently use mobile devices show problematic behaviors. According to Donohue and Aladé, (2022), the use of mobile devices is a risk for the psychosocial well-being of children, which has an association with difficulties with attention, concentration and behavioral problems.

Faced with this situation, the American Academy of Pediatrics presents recommendations on the use of mobile devices. Children 18 to 24 months of age should have no screen time and children 2 to 5 years of age should have limited screen time of one hour or less per day (Pappas, 2022).

This study is a systematic review, which has been structured with clear information that answers the aforementioned research questions, and was made up of multiple primary sources that represent the highest hierarchical level of evidence.(Moreno et al., 2018).

2. Methodology

The PRYSMA methodology was used, which begins by describing the records found by the bibliographic search, eliminating duplicate documents and subsequently the records that are related to other studies. It consists of the following steps: a) number of records that have been found; b) number of records excluded after the preliminary evaluation in the review of titles and

abstracts; c) number of records that have been recovered in full text; d) number of records that have been excluded after evaluating the full text; e) number of records that have met the eligibility criteria for review and f) number of studies that have contributed to their main result (Higgins and Green, 2011).

To obtain the results of the systematic review, the following questions were established: What is the frequency of children's use of mobile devices in early childhood? What is the impact of frequent use of mobile devices in early childhood?

To compile the information, primary sources related to the topic were located from December 3, 2023 to January 12, 2024. The search period was based on studies published from 2020 to 2023. As a search strategy, the descriptors: ("Mobile devices") AND ("early childhood"), in Spanish and (TITLE-ABS-KEY ("mobile devices") AND TITLE-ABS-KEY ("early childhood") in English using Boolean operators and and orinthe databases: SCOPUS, Web of Science, Gale OneFile Psychology and ProQuest.

The following inclusion criteria were considered: primary studies in English and Spanish; published between 2020 and 2023; full-text open access articles; peer-reviewed scientific articles; studies of qualitative and quantitative approaches that have in their methodology and results the topic of interest about the use ofmobile devices in early childhood and studies that are published in indexed journals.

The following exclusion criteria were applied: studies that have a language other than English or Spanish; that do not contain discussion; studies with a low level of scientific quality; studies that do not maintain a relationship with the objective of the systematic review; that are not published in indexed journals; studies more than 5 years of publication; essay documents and monographs.

Table 1. Search strategy according to the database.

Database	Search strategy	Search date	Results	Selected
SCOPUS	TITLE-ABS-KEY ("mobile devices") OR TITLE-ABS-KEY ("early childhood")	12/03/2023 01/12/2024	-75	eleven
Web Of Science	TITLE-ABS-KEY ("mobile devices") OR TITLE-ABS-KEY ("early childhood") TITLE-ABS-KEY ("Mobile Devices") AND TITLE-ABS-KEY ("early childhood")	12/03/2023 01/12/2024	-175	6
Gale OneFile Psychology	TITLE-ABS-KEY ("mobile devices") OR TITLE-ABS-KEY ("early childhood")	12/03/2023 01/12/2024	-7	1
ProQuest	TITLE-ABS-KEY ("mobile devices") OR TITLE-ABS-KEY ("early childhood") (TITLE-ABS-KEY ("Mobile Devices") AND TITLE-ABS-KEY ("early childhood")	12/03/2023 01/12/2024	-40	4
TOTAL			297	22

Note: The table describes the databases consulted, the descriptors used and the number of publications found and selected.

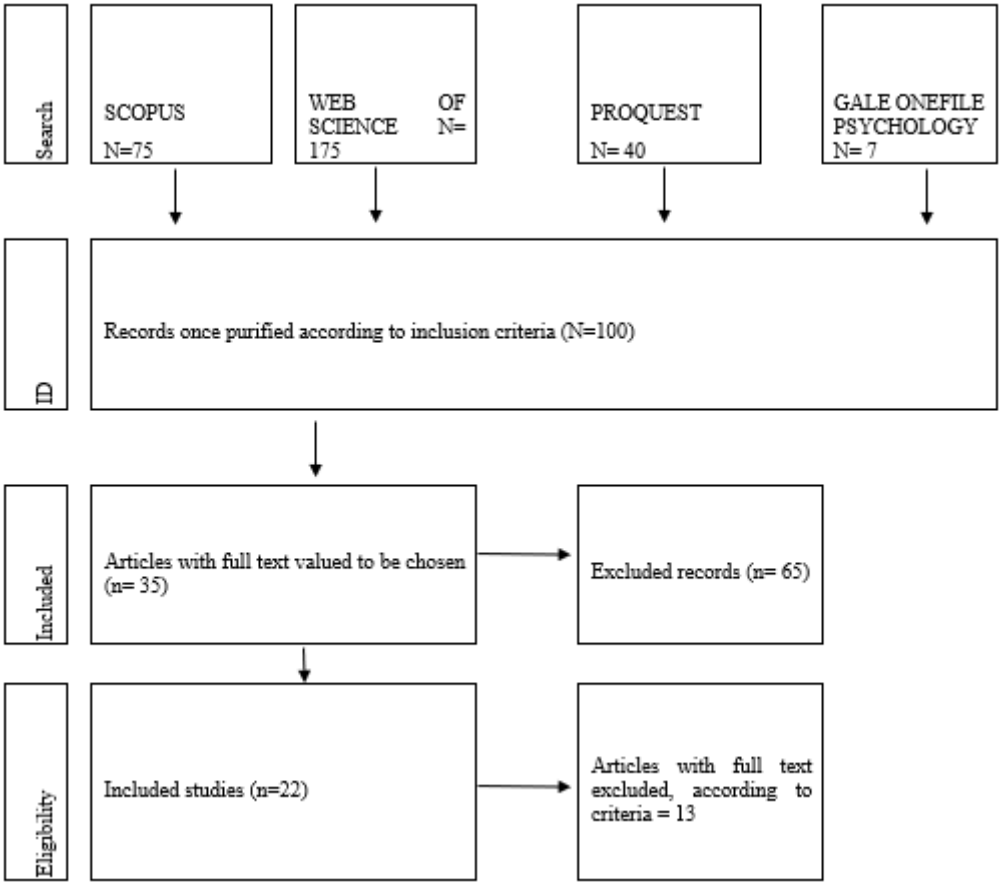

Figure 1. Flowchart - PRISMA

Note: The graph describes the inclusion and exclusion process of the literature search.

The preliminary sample prior to the final sample consisted of 297 articles, of which 22 only met the criteria to be selected. The studies that were excluded, although they are framed in the use of mobile devices, do not focus on early childhood ages and non-empirical research. Figure 1 shows the flow chart of the bibliographic search and selection process, following the steps of the PRYSMA method.

3. Results

Next, the general data of the first results of the bibliographic search of the SCOPUS database will be presented, which will allow analyzing the trend in the evolution of publications, the

number of authors who have published, the main affiliations and the countries that have published related to the topic of the study.

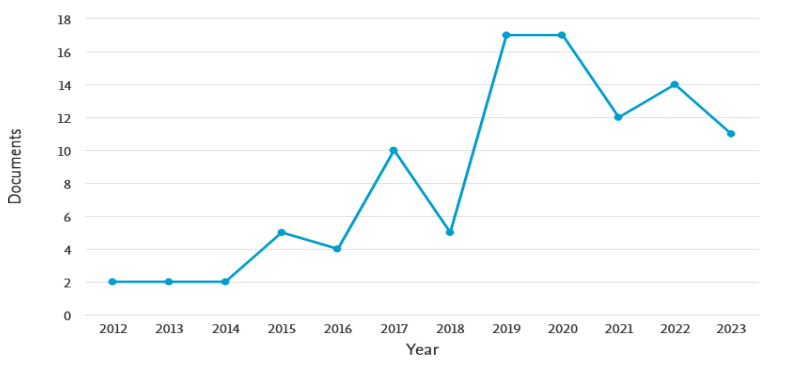

Figure 2. Evolution of publications.

Note. The figure shows the fluctuation of publications made from 2012 to 2023.

Taking the SCOPUS database as a reference, it can be seen that from 2012 to 2014 the study topic "use of mobile devices in early childhood" has had little importance, but starting in 2015 the studies have There has been growth in interest in publications, but there is a decrease in the years 2021 and 2023.

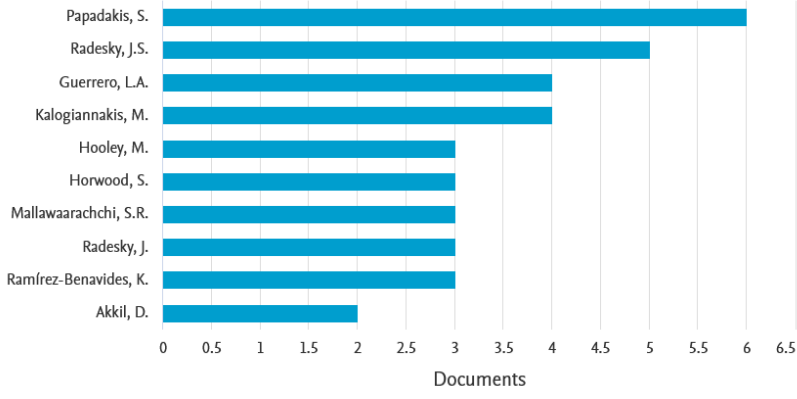

Figure 3. Authors who have published

Note. The figure shows the number of publications by authors.

Papadakis stands out as the main author, who has the greatest number of publications, followed by Radesky, Guerrero, Kalogiannakis, Hooley, Horwood, Mallawaarachchi, Radesky, J. Ramírez-Benavides and Akkil.

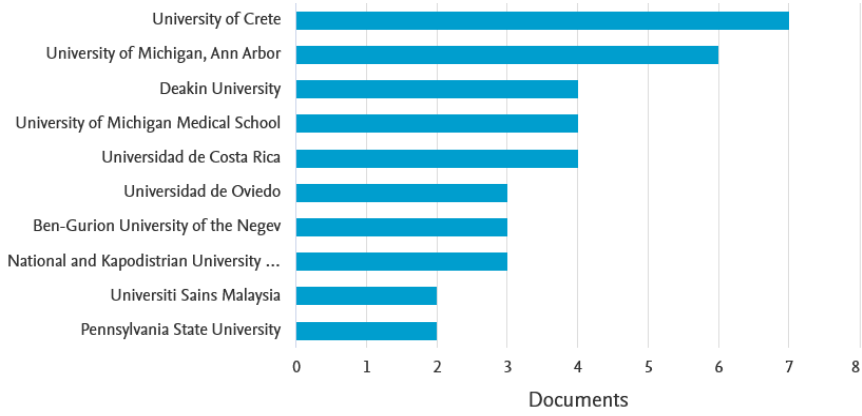

Figure 4. Main affiliations

Note. The figure shows the number of publications by the main affiliations.

The universities that stand out as interested in the topic are: University of Crete, University of Michigan, Ann Arbor, Deakin University, University of Michigan Medical School, University of Costa Rica, University of Oviedo, among others.

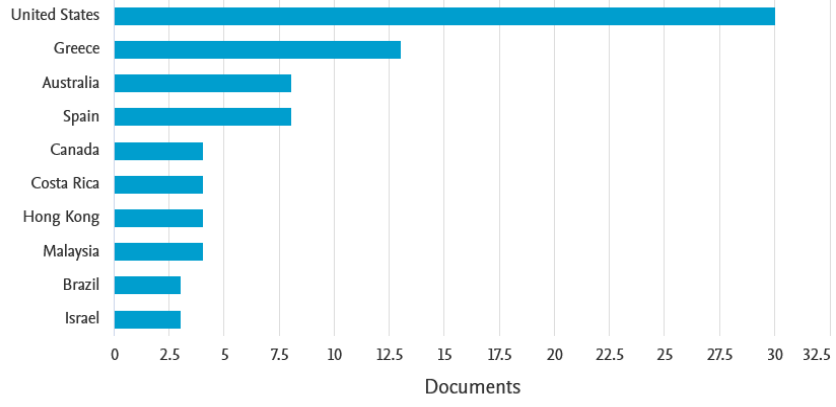

Figure 5. Countries that have published.

Note. The figure shows the number of countries that have published.

The countries with the highest level where research related to the topic of study has been published are: the United States, Greece, Australia and Spain. It is observed that among the Latin American countries, Costa Rica for Central America and Brazil for South America have published publications showing their interest at low levels.

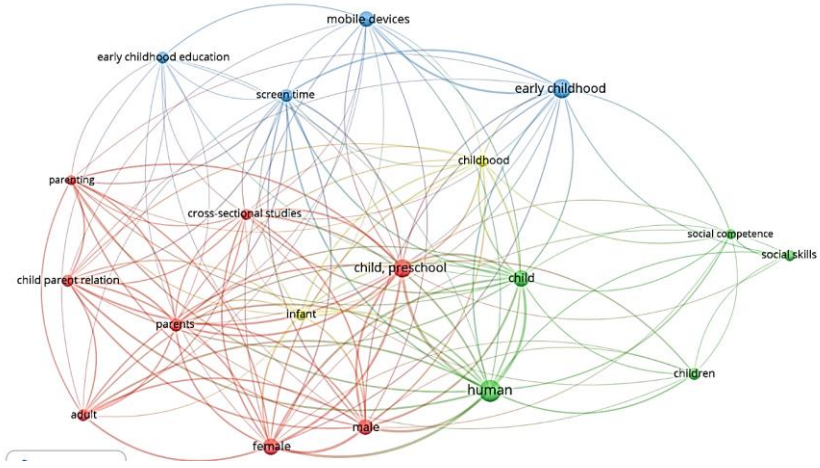

Figure 6. Most used keywords.

Note. The figure shows the number of keywords in the publications related to the topic of this study.

The thematic content was analyzed using key words, the most used and related to each other are: early childhood education, mobile devices, screen time, early childhood, childhood, social competence, children, infants, relationship of parents with children, social skills, parent-child relationship.

Table No. 2 Characteristics of the studies included in the systematic review.

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Characteristics of the studies included in the systematic review.

No.	Author or authors	Context	The purpose of the study	Type of study	Participants	Methods	Main Findings
1	Franco, S. (2021)	Spain	Gain knowledge about different aspects that have to do with the daily use of these devices by children	Non-experimental descriptive method framed within the mixed research modality, descriptive-correlational	Sample of 201 families, with children aged between 3 and 6 year old	The data is collected from a secondary source, the children's parents, who It is believed to be highly reliable.	79.1% of children from 3 to 6 years of age use their parents' cell phone and 26.9% use their own cell phone. Boys use the cell phone more time than girls and the time spent using it is 106 minutes from Monday to Friday
2	Mallawaarachchi, S.R., Hooley, M., Sutherland-	Australia	Explore the factors that support parental attitudes,	Qualitative study was part of a	Eligible participants were English-speaking	The online interviews were	Parents expressed fear about the use of mobile

	Smith, W. Horwood, S. (2022)		Subjective norms and perceived behavioral control	longitudinal survey online from young children's smartphones and tablets.	elementary school students. caregivers (parents or guardians) of a toddler or preschool-aged child from one to six years old living in Australia.	conducted in English and hosted and recorded via the online platform Zoom. The interview followed a semi-structured format with primary (main) open-ended questions that are asked in each interview	devices, indicating that they supplant real social interactions and opportunities for family bonding. Parents lamented the loss of traditional games and exploration of natural environments. that mobile devices limited face-to-face social interactions and family bonding in children, when they stopped using mobile devices they caused tantrums that were difficult for parents to handle
3	Gueron-Sela, N., Shalev I., Gordon-Hacker A, Egotubov A, Barr, R., (2023)	Israel	Evaluate the longitudinal trajectories of young people children's exposure to screen media through a series of national COVID-19 home closures and examine the predictive associations between different aspects of media exposure and post-lockdown behavioral adjustment.	Longitudinal data that measure various aspects of media use, behavioral behavior and emotional problems	313 Israeli children between the ages of two and five	Data was collected at four time points during and after periods of home confinement in Israel.	Among the most frequent activities are: watching videos, playing video games and listening to music
4	Aslan, A., & Turgut, Y.E. (2023).	Türkiye	Investigate the use of mobile devices, including smartphones and tablets, in terms of types of mediation for parents who have young children.	Qualitative methodology, case study	12 children between 4 and 7 years old	The children were observed in their homes, which are their natural habitats, to collect detailed information.	Children frequently played games and watched videos on mobile devices. Most parents considered their children's use of mobile

							devices to be risky and harmful.
5	Rocha, B., Ferreira, LI, Martins, C., Santos, R., & Nunes, C. (2023)	Portugal	Analyze the relationship between the use of multimedia devices and pediatric health.	Quantitative, cross-sectional and descriptive empirical study, with a simple retrospective research plan	A total of 340 parents of children from 18 to 57 months	Self-report questionnaire	The medium most used by children is television and girls used touch screens more with a greater amount of time than boys.
6	Konok, V.; Sz˝oke, R. (2022).		Review the evidence for the existence of the two simplest causal relationships if the use of digital media affects mental health, and if mental health affects the use of digital media.	Longitudinal associations between behavioral difficulties and MTSD use	173 Parents of children aged 4 to 6 years at the time of the first data collection and 7 to 9 years old at the time of the second data collection.	Broader questionnaire (Digital Questionnaire for children) in which parents reported on their children's digital activity between May and August 2016	There is an association between relationship problems with peers and the use of mobile devices with touch screens, and poor sociocognitive skills
7	Wu, H., Wen-Yi, L., Jian-Pei, H., Chen-Li, L., Heng-Kien Au, Yu-Chun, L., Ling Chu C., et al. (2023)	Taiwan	Examine the effects of mobile devices. and shared reading about preschool children's development along with the effects of motherhood.	Transversal study	Mothers of 202 children between 2 and 5 years old.	Maternal self-report questionnaires on mobile device use, shared reading, and child emotions and behavior. The CBCL T-score was applied for each of the seven scales evaluated.	Mothers spending more time on mobile devices were significantly associated with their children's excessive mobile device usage time.
8	Gonztolez-Sanmamed, M., Losada-Puente, L. Rebollo-Quintela, N., and RodrYoguez (2023).	Spain	To investigate the perception of families regarding the use that their daughters and children used mobile devices.	Quantitative research with descriptive design, transversal and correlational	241 families, with children/ from 3 to 8 years	Ad hoc designed questionnaire on the use of mobile devices in childhood.	The risks to which children are exposed are access to inappropriate content, the risk of suffering from Cybercrimes and addiction.
9	Fitzpatrick, C., Almeida, M.L., Harvey, E., GaronCarrier, G., Berrigan, F., and Asbridge, M., (2020).	Canada	To examine media use patterns in preschool children and the extent to which child and family characteristics contribute to media	A cross-sectional study of digital media use by preschool children.	316 Canadian preschool children	Questionnaire and a 24-hour recall diary in the context of an ongoing study on children's	64% of infants stay in front of the screen for twice the time recommended by health professionals. The most

			use during the COVID-19 pandemic.			digital media use	frequent activities are watching YouTube shows, television shows and movies. that children who are exposed to twice the recommended daily amount of screen time do so before bed, and also mentions that children who demonstrate greater regulation of their emotions, attention, and movement have less exposure to mobile devices. Every hour of parental screen time contributed to a 129% increase in the odds of a child exceeding the recommended two hours of screen time.
10	Stamati, M., Gago-Galvagno, L., Miller, S., Elgier, A., Hauché, R., Azzollini, S., (2022).	Latin America	Describe the era of initiation of electronic media. and the hours of daily use of babies aged 2 to 3 years. 48 months; (b) study the relationship between the age of initiation, the time of screen use and the acquisition of motor skills and language. milestones; (c) associated use of electronic media and sociodemographic variables.	Cross-sectional study	253 caregivers primary care of infants in Latin America Argentina, and other countries of the region with ages between 2 and 48 months	Reports of parents about electronic media use, developmental milestones motor and language, the Developmental Inventory of Communication Skills (CDI) and the Permanent Household Survey (EPH) for evaluate sociodemographic variables	Children own their own mobile device at the age of 3. The average use of cell phones by children is from their first year of life and their dedication time is one hour a day

11	Danet, M., Miller, A.L., Weeks, H.M., Kaciroti, N., & Radesky, J.S. (2022).	USA	To determine whether young children with weaker self-regulation They use more digital media.	Longitudinal study	The parents of 368 American children aged 3 to 4 years.	Confusion, Disorder and Order Scale, a 15-item scale self-report Questionnaire that evaluates noise levels, overcrowding. and disorganizatio n at home.	One-third of children who received mobile devices to calm them had weaker executive functioning, including working memory, planning and organization. The metacognition index was significantly associated with the use of devices for calming purposes and the use of educational applications, determining that children who play with more educational applications would have weaker metacognition and general executive functioning, due to the direct effects of distraction or digital oversimplificat ion
12	Donohue, T.H., & Aladé, F. (2022).	USA	Investigate Caregivers' thoughts and perceptions about their kindergarten children's tablet use in the classroom.	Qualitative study	10 Kindergarten Caregivers	Focus group	There is a negative impact on children's development in terms of interference with social development and displacement of traditional learning activities, indicating that tablets could disrupt their children's social

							learning. One of the caregivers described her son's behavior as "Zombie-like" when using tablets, some showed problematic behaviors, expressed anger when screen time ended
13	McDaniel, B.T., & Radesky, J.S. (2020).	**USA**	Test the hypothesis that, during 6 months, the child externalizing behavior would predict subsequent media use, mediated by parental stress, and media use and predict subsequent externalizing behavior.	Longitudinal study	Mothers and fathers of 183 heterosexual couples. with a child from 1 to 5 years old	Child Behavior Checklist, and parental stress through the Parenting Stress Index.	They found small correlations between the child's externalizing behavior and the use of mobile devices, this being used with a frequency of less than an hour a day, but at the end of their results (six months) they concluded that the use of mobile devices smart devices were not associated with the child's subsequent externalizing behavior, considering that these data would be related to a reduced time of use of mobile devices by infants
14	Mata Calderón, A., & Carmiol Barboza, AM (2022).	Costa Rica	Describe the features of the use of mobile phones and tablets in Costa Rican children between 1 and 5 years of age and their caregivers	Mixed design	22 non-participant observations to groups of people that included children approximately 1 to 5 years of age.	Observations non-participants.	Children use the mobile device for an average of 75.43 minutes a day during the week, 42.9% of caregivers sometimes

							give the phone to their child in order to entertain them and be able to do another activity.
15	Niiranen, J., Kiviruusu, O., Vornanen, R., Saarenpää-Heikkilä, O., & Juulia Paavonen, E. (2021).	**Finland**	To investigate the frequency of electronic media (e-media) use by preschool children and the risks of high-dose electronic media use on young children's psychosocial well-being.	Longitudinal associations between electronic media use at 18 months and psychosocial symptoms at 5 years of age, as well as cross-sectional associations between electronic media use and psychosocial symptoms at 5 years.	699 5 year old children	Strengths and Difficulties Questionnaire (SDQ) 25 or the Five-to-Fifteen (FTF)26 Questionnaire	The high level of digital screen viewing is a risk for the psychosocial well-being of the infant, which is associated with hyperactivity and behavioral problems. The negative effect of using electronic media is less in 18-month-old children than in 5-year-old children. High levels of screen time at the age of 5 years are associated with multiple psychosocial problems such as hyperactivity, difficulties with attention, concentration, and behavioral problems. Watching programs was associated with a higher risk of psychosocial problems
16	Osika, SD;Issaeva, L.;Boutin, E.;Osika, E.. (2023).	**France**	Accurately describe the exposure of French children aged 12 to 36 months to screens	Observational, cross-sectional, descriptive and analytical study	171 parents of children aged 12 to 36 months who consulted in different hospitals in the Paris region during the summer of 2020.	Questionnaire	22.7% of children use a mobile device from 18 months of age and 94.6% from 5 years of age, the use time is 60 minutes a day.

17	Muñoz-Carril, P C., Álvarez-de-Sotomayor, ID, Fuentes-Abeledo EJ, et al (2022)	Spain	To identify the perceptions of families about the frequency and way in which their children enrolled in Primary Education use mobile phones and the type of activities they do with them.	Quantitative methodology	1,135 primary education students	Questionnaire	Among the most frequent activities of children are: watching videos, playing video games and listening to music
18	Hmidan, A., Seguin, D. and Duerden, E.G. (2023)	**Canada**	To determine which school and home factors were associated with challenging behaviors in Canadian schoolchildren during the COVID-19 pandemic.	Longitudinal study	Parents (over 18 years old) and children (ages 6 to 12) residing in Canada with children receiving education through the public school systems.	Survey about your parental involvement, stress levels and your children's screen time use, emotional and behavioral difficulties	Screen time is significantly associated with anxiety and depressive symptoms in children.
19	Choe, D.E.;Lawrence, A.C.;Cingel, D.P.(2023)	**USA**	Examine parents' leisure media use and preschool children's leisure media use.	Transversal study	72 Parents with school-age children	Survey	In preschool age, screen time is negatively related to self-regulation in children, the use of mobile media is a stronger negative predictor of self-regulation.
20	Moore Hill M., Gangi, D., Miller, M., Mohamed Rafi, S., Ozonoff, S., (2020).	**USA**	Examine the relationship between video-based media viewing (screen time), behavioral outcomes, and language development	Cross-sectional analysis of data at 36 months from a prospective longitudinal investigation of children with increased familial risk of ASD and ADHD	120 36-month-old children with a family history of autism spectrum disorder (ASD) or attention deficit hyperactivity disorder (ADHD). or no family history	Observation	A significant relationship was found between screen time and lower linguistic skills, indicating that receptive and expressive language decreases as screen time increases.
21	Radesky, J.S. Kaciroti, N; Weeks, HM; Schaller, A; Miller, Alabama. (2023)	**USA**	To examine longitudinal and bidirectional associations between parent-reported frequency of using mobile devices to calm toddlers and children's executive functioning (EF)	Prospective cohort study	English-speaking parents of children ages 3 to 5	Child Behavior Questionnaire: Very Short Form Urgency Score, Median Split).	The frequent use of a mobile device to calm children can generate displacement of opportunities for infants to learn emotional

			and emotional reactivity, testing for moderation by child sex and temperament.				regulation strategies.
22	Gueron-Sela, N., & Gordon-Hacker, A. (2020).	**Israel**	Comprehensively evaluate both direct and indirect media use and practices in early childhood.	Short-term longitudinal design	199 mothers of toddlers who completed questionnaires at 18 months, 22 months, and 26 months of age.	Attentional Focus of the Short Form of the Early Childhood Behavior Questionnaire. The attentional focus subscale.	Higher levels of the cumulative media use variable predicted lower consecutive attention skills during childhood. Results show that greater cumulative media use at age 18 months directly predicted less focused attention at age 22 months. The findings suggest that high media use in early childhood (18 months of age) may initiate a cascade of attention difficulties that could persist throughout childhood.

Note: This table shows the characteristics of the studies that have been selected in the systematic review.

Next, the results of the information extracted from the scientific articles that have been selected through an exhaustive analysis will be presented. The information had a coding process of the data described in the research questions posed.

What is the frequency of mobile device use in early childhood?

Scientific studies have reported that the use of mobile devices in early childhood is frequent, it is supported by research carried out by Donohue and Aladé (2022), who report that infants use the mobile device for more than one hour a day, compared to In this situation, caregivers must keep track of time when they exceed 1 hour a day.

As reported by Stamati et al (2022), the average use of cell phones by children is from their first year of life and their dedication time is one hour a day; similar data is reported by Osika et al

(2023).) and Niiranen et al (2021), revealing that 22.7% of children use a mobile device from 18 months of age and 94.6% from 5 years of age, the use time is 60 minutes per day. day. Mata and Carmiol (2022) mention that children use the mobile device for an average of 75.43 minutes a day during the week, 42.9% of caregivers sometimes give the phone to their child in order to entertain them and be able to carry out another activity. Franco (2021) reports that 79.1% of children between 3 and 6 years old use their parents' cell phone and 26.9% use their own cell phone. Boys use the cell phone more time than girls and the time dedicated to its use is 106 minutes from Monday to Friday. However, Rocha et al (2023) indicated that the medium most used by boys is television and girls They used touch screens more for a greater amount of time than children.

Among the information obtained about the activities that children carry out with the mobile device, Dobado and Nielsen (2020) tell us that they use it as an entertainment instrument; according to Niiranen et al (2021), 66.8% use it to watch programs and the 10.6% for electronic games; similar data refer to Aslan and Emrah (2023); Gueron-Sela et al, (2023)andMuñoz-Carril et al (2022) that among the most frequent activities are: watching videos, playing video games and listening to music instead Osika et al (2023); Fitzpatrick et al, (2022) state that they use it to watch YouTube programs, television shows and movies.

Niiranen et al (2021) mentions that parents limit their children's use of mobile devices from Monday to Friday and when the weekend arrives they are more permissive, stating that they lack training on preventing their inappropriate use. Fitzpatrick et al, (2022) contribute indicating that children who are exposed to double the recommended daily amount of time do so before going to bed. In addition, they mention that children who demonstrate greater regulation of their emotions, attention and movement have less exposure to mobile devices. Each hour of time that parents spend in front of the screen contributes to a 129% increase in the probability that the child will exceed the two hours of the recommended time. Similar data are mentioned by Wu et al (2023), indicating that mothers who spent more time in front of the mobile device were significantly associated with their children's excessive use of mobile device time.

The second question has been raised: What is the impact of frequent use of mobile devices in early childhood?

The results of the selected studies show that children's behavior is affected by the frequent use of mobile devices and that the risks to which they are exposed are high, according to Aslan and Emrah (2023).andgonztolez-Sanmamed et al (2023) indicate that access to inappropriate content, suffering from Cybercrimes and addiction are the risks to which they are exposed, otherwise Mallawaarachchi et al (2022) points out that parents show fear about the use of devices mobile, because they supplant real social interactions and opportunities for family bonding, as well as the loss of traditional games and the lack of exploration of natural environments.

According to Danet et al (2022), one-third of children who received mobile devices to calm them had weaker executive functioning, including working memory, planning, and organization. The metacognition index was significantly associated with the use of devices for calming purposes and the use of educational applications, determining that children who play with more educational applications would have weaker metacognition and general executive functioning,

due to the direct effects of distraction or digital oversimplification. Similar data indicates Moore Hill et al, (2020) where they found a significant relationship between screen time and lower linguistic skills, indicating that frequent use decreases receptive and expressive language as screen time increases.

The contribution of Donohue and Aladé, (2022), is significant for this study, revealing that there is a negative impact of the use of mobile devices on the development of infants, in terms of interference with social development and displacement of activities. traditional learning. One of the caregivers described that his children showed "Zombie-like" behaviors when using tablets, others with problematic behaviors, and when screen time ended they expressed anger. Similar data indicated Mallawaarachchi et al (2022), that mobile devices limited in-person social interactions and family bonding in children and when they stopped using mobile devices they expressed tantrums that parents could not handle.

According to Niiranen et al (2021), the high level of digital screen viewing is a risk for the psychosocial well-being of the infant, which is associated with hyperactivity and behavioral problems. The negative effect of electronic media use is less in 18-month-old children than in 5-year-old children. High levels of screen time at the age of 5 years are associated with multiple psychosocial problems such as hyperactivity, difficulties with attention, concentration and behavioral problems. Watching programs was associated with a higher risk of psychosocial problems. Similar data is reported in the study by Konok and Sz″oke (2022), pointing out that there is an association between relationship problems with peers and the use of mobile devices with touch screens and poor sociocognitive skills.

Contributions from Gueron and Gordon, (2020), indicate that higher levels of the cumulative media use variable predicted lower consecutive attention skills during childhood. Results show that greater cumulative media use at age 18 months directly predicted less focused attention at age 22 months. The findings indicate that high media use in early childhood (18 months of age) can initiate a cascade of attention difficulties that could persist throughout childhood.

In the same way, studies carried out by Mcdaniel, Radesky (2020) reveal that at the beginning of the research they found small correlations between the child's externalizing behavior and the use of mobile devices, this being used with a frequency of less than an hour per day. day, but at the end of their results (six months) they concluded that the use of smart devices was not associated with the child's subsequent externalizing behavior, considering that these data would be related to a reduced time of use of mobile devices by the infants. According to Choe et al (2023), in preschool age, screen time is negatively related to self-regulation in the child. The use of mobile media is a stronger negative predictor of self-regulation; similar data are mentioned by Hmidan et al (2023), noting that screen time is significantly associated with anxious and depressive symptoms in children. Radesky et al, (2023) state that the frequent use of a mobile device to calm children can generate the displacement of opportunities for infants to learn emotional regulation strategies.

4. Discussion

The time children use mobile devices is 1 hour per day and the starting age is from the first year of life, which is supported by the studies by Donohue and Aladé (2022); Stamati et al (2022); Osika et al (2023) and Niiranen et al (2021), however Mata and Carmiol (2022) point out that children use it 75.43 minutes a day on weekdays and Franco (2021) reports that its use is 106 minutes from Monday to Friday. .

According to the most used medium and the most frequent activities Aslan and Emrah (2023); Gueron-Sela (2023); Muñoz-Carril et al (2022); Osika et al (2023); Fitzpatrick et al, (2022) point out that activities include: watching videos, playing video games, listening to music, watching YouTube programs, television shows and movies.

Regarding the risks to which children who use mobile devices are exposed, Aslan and Emrah (2023) and Gonz point outtolez-Sanmamed et al (2023) which consist of viewing inappropriate content, suffering from Cybercrimes and addiction, on the other hand, in the study carried out by Mallawaarachchi et al (2022) the risk consists of reducing or replacing social interactions and family ties.

In relation to the impact of the use of mobile devices on children, Danet et al (2022) showed that children had weaker executive functioning due to the direct effects of distraction or excessive digital simplification, while Moore Hill et al. al, (2020) indicated that it generated a decrease in linguistic skills, in receptive and expressive language. An important contribution to the study refers toNiiranen et al (2021), indicating that the high level of digital screen viewing is a risk for the psychosocial well-being of the infant, which is associated with hyperactivity and behavioral problems.

5. Conclusion

The results of this systematic review study provide relevant information regarding the analysis of the impact of frequent use of mobile devices in early childhood. Relevant data have been presented indicating that the frequency of use of mobile devices varies according to age. Children under 18 months use the mobile device 60 minutes a day, this average increases at ages 5 years and older. The average age to start using a mobile device is 12 months of age.

Children who are exposed to prolonged screen time do so before bed and spend more than two hours a day watching television programs, videos, movies and video games. The time that caregivers dedicate to cell phone use increases the probability that the infant uses the mobile device for more than two hours a day.

Infants who are calmed by a mobile device show weaker executive functioning, as do those who play with educational applications, due to excessive digital screen use. It is evident that there is a negative impact on the social development of infants, generating problematic behavior.

Digital screen viewing is a risk for psychosocial well-being in children. Screen use in 5-year-old children is associated with multiple psychosocial problems such as hyperactivity, attention and concentration difficulties, and behavioral problems.

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