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# Parental perception about children's mobile usage

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ABSTRACT

Children are immersed in their mobile usage. Meanwhile, parents' preferences and beliefs towards technology have a major role in preschoolers' mobile usage as they directly affect the quality and the quantity of mobile usage available to them, especially at home. It is, therefore, crucial to understand how parents perceive the changes caused by smart screen technologies upon their children's mobile usage. This study aimed to investigate parental perceptions and children's daily mobile usage.



## Introduction

Playing is a children's world. Playing is fundamental for children, for they can gain the ability to solve problems, do teamwork, and grow creativity. Those abilities are essential in order to be successful in their adult life (Yogman et al., 2018). However, there is a change in the game that children played in the past with children who live in the digital age. The game that children play today are games related to technology. Technology advancement allows children to play with the screen. Screen use includes mobile device use, television watching, playing video games, and computer use (Perez et al., 2022). The use of mobile usage in early childhood is rapidly growing in the digital age. Children use mobile usage to play games, access entertainment, such as video games and other entertainment applications, and use social media as well (Srinahyanti et al., 2019).

Current studies on mobile usage among children are focused on extensive Internet usage among school-going children; however, limited information is available regarding screen use among pre-schoolers, considering that preschool age is a critical developmental stage of learning in school and at home (Hu et al., 2018). This increase triggers questions in parents; what is the actual effect of mobile usage on children's development. To address this gap, this study aimed to investigate parental perceptions about technology and children's daily mobile usage.

## 1. The positive impact of mobile usage on pre-schoolers

In today's digital societies, many young children have benefited from digital devices designed for education, entertainment, and play (Işıkoğlu et al., 2021). Digital play has positive contributions, such as relaxation, abreaction, entertainment, learning, and the development of many skills (Biddiss & Irwin, 2010; Groves & Anderson, 2016).

Research has shown several benefits from the use of screen media. For example, educational television, such as Sesame Street, has been found to influence pre-schoolers math skills, vocabulary size, prosocial behaviour, and school readiness (Fisch et al., 1999). Children also will be more eager to learn because such applications are usually complemented by interesting pictures and writing letters certainly has a positive impact on children's brain development (Sari, 2020). Parents report that apps stimulate children cognitively. In games, children have to use several senses and motor coordination. They also stimulate logical and strategic thinking (Brito et al., 2018).

Moreover, this study also relates to the project that the author has conducted with the team in two consecutive years (2017-2018 and 2018-2019). This project came from my winning grant funded by the Ministry of Research and Technology/National Research and Innovation Agency Deputy Field of Research and Development Strengthening of the Republic of Indonesia. This project involves designing a learning media for young learners in a software form (interactive multimedia) that can be used by children on both computers and mobile usage. This software is comprised of (1) a game to introduce West Kalimantan's natural resources (Hadary F, Yuniarni Desni, Wulandari RS, 2018), (2) a game to introduce the cultures of ethnics in West Kalimantan, which are the Chinese, Dayak, and Malay (abbreviated to CIDAYU) (F.Hadary, 2019) and (3) interactive multimedia based on culture typical of West Kalimantan (Yuniarni et al., 2019)

This multimedia software has intellectual property rights from the Ministry of Law and Human Rights of the Republic of Indonesia. From the study findings on the software, according to teachers, the young learners seem excited and enthusiastic in learning through software in multimedia. In addition, the design of interactive multimedia in the form of video animation is considered very feasible to use and can attract children's interest in learning (Yuniarni et al., 2019).

## 2. The negative impact of mobile usage on pre-schoolers

As children's interaction with digital technologies increases day-by-day, the duration of children's technology use has become a hot topic (Konca, 2022). Children are immersed in screen media (Li et al., 2022). However, increased mobile usage among pre-schoolers is becoming a public health concern (M. Sharma et al., 2021). Research conducted by (Kerai et al., 2022) shows that exceeding the recommended daily amount in the early years is associated with a developmental vulnerability. Especially, more than one hour of mobile usage per day was positively associated with vulnerability in physical, social, emotional, and cognitive developmental health domains.

Other scholars opine that an early adoption of digital media predisposes children to physically inactive indoor lifestyles (M. Chia, 2008; M. Y. H. Chia et al., 2022), displaces outdoor play (Biddle et al., 2010), increases the risk of an earlier development of myopia (Huang et al., 2015), affects low psychological well-being (Rabbani et al., 2022), impairs self-regulation (McDaniel & Radesky, 2018b), and reduces the quality of parent–child interactions (Kushlev & Dunn, 2019), among other insidious outcomes (Hill et al., 2016).

Moreover, some studies have stated the negative impact of mobile usage on young learners. As the mass availability and use of digital technologies is a relatively recent phenomenon, there is limited hard evidence available to date on whether digital technologies, including social media, cause mental health problems in children and young people (OCDE, 2018). Also, there is empirical evidence that extensive exposure to video game playing during childhood may lead to neuroadaptation and structural changes in neural regions associated with addiction (Sigman, 2017). Another research has shown that long hours of mobile usage are negatively associated with children's healthy development (Kerai et al., 2022). Meanwhile, the rising trend of excessive use of screens and digital media, a growing challenge for child neurology, leads to exposure to blue lights, which has an impact on the child's brain and leads to a disorder called Screen Dependency Disorder (SDD) (Anjali et al., 2020). Moreover, psychologists have discovered that the impacts of SDD are numerous for all kids, and affected children may experience excessive gain or loss in their weight, insomnia, headache, and most importantly, poor nutrition during their initial growth and development stage. Many of those who suffer from the disorder prefer to isolate themselves from others, are often agitated, and suffer mood swings (S. K. Sharma, 2018).

### 3. Parental perception of technology

In order to understand the nature of the experience of children under the age of 7 years, it is important to consider the attitudes, perceptions, and beliefs of the parent toward technology (Vittrup et al., 2016). Parents play an important role in ensuring the best developmental outcomes for children by monitoring, understanding, and, perhaps, intervening where necessary, in the daily habits of children while using mobile usage (M. Y. H. Chia et al., 2022). Moreover, parental concerns about their child's mobile usage, combined with an accelerating increase in media use and the subsequent potential negative impact of these media devices, place parents in the difficult position of attempting to regulate their child's mobile usage access adequately (Sanders et al., 2016). Proper parenting is necessary for caring for children from the influence of mobile usage. Parental guidance and advisory are needed to avoid negative impacts on the utilization of mobile usage (Kusumaningtyas et al., 2019).

### 4. Children's mobile usage in Pontianak

Meanwhile, there were some studies corresponding to the use of mobile usage for early childhood in Pontianak City, such as the research conducted by Puspa (2019). The results of her research represent those early childhood activities begin to shift from active play to being passive play as the impact of screen-based media technology on children (36, 8% of children used routine mobile usage every day with an intensity of more than 1 hour and 63, 2% of children used routine mobile usage every day with intensity is less than 1 hour). The population of this research was parents who had children aged 4-6 years in Pontianak City. The analogous research report by Widayanti (2019), which is there is an increase in time of use of mobile usage in early childhood. At first, they only used it for a short duration or under two hours, but the duration increased to become more than two hours. Moreover, another research shows that from the 170 students aged 3-6 years, there are 166 children in kindergarten Private Christian Immanuel Pontianak uses mobile usage. With the length of use of mobile usage is 30 minutes to five hours per day. This led to 170 children, as many as 61 children, who, according to observation parents at home, children prefer to use their mobile usage rather than play with their peers (Trinika, 2015).

All these data show a high dependence of children on mobile usage, which is inappropriate and excessive use of mobile usage can cause addiction and interfere with physical, psychological, and emotional health, increase social isolation, and negatively affect development, especially in children (Ardiyani et al., 2021). Besides, the negative impact of the mobile phone on early childhood's mental health is if they become addicted to the mobile phone so they spend more time playing on mobile phone and refuse to interact with other people. As an effect, they will face difficulty in communicating with other people, get angry easily, find it hard to concentrate, and become unruly, which such things may cause deterioration in their mental health (Yuniarni, 2019).

## Method

### 1. Participants

A total of 615 parents provided consent to participate in this study and offered information about their children. Parents were recruited based on the criteria of parents who send their children to Kindergarten in Pontianak city, where their children are between the ages of three and six was analyzed for the current study. The six kindergartens from six sub-districts in Pontianak City, including West Pontianak, Pontianak City, South Pontianak, Southeast Pontianak, East Pontianak, and North Pontianak. All participants signed informed consent prior to filling out the questionnaire. Among the participants, all the parents were mothers (100%); 257 were parents of boys (41.8%), and 358 were parents of girls (58.2%); 138 were 3–4 years old (22.4%), 162 were 4–5 years old (26.3%), and 315 were 5–6 years old (51.2%). Demographics by sample (preschool samples) are presented in Table 1.

**Table 1**
Sample demographic characteristics by study.

| | M (S.D.) or percentage |
|---|---|
| | Children<br>n = 210 |
| Parent age (mother) | |
| Between 20 -30 years old | 73.8% |
| Between 31 -41 years old | 25.6% |
| Over 42 years old | 0.6% |
| Parent race | |
| Malay | 80.5% |
| Dayak | 10.1% |
| Chinese | 5.3% |
| Bugis | 1.4% |

| | |
|---|---|
| Javanese | 2.7% |
| Parent marital status | |
| Single | 1.8% |
| Married | 98.2% |
| Parent education | |
| College degree | 78.3% |
| High school graduation | 21.7% |
| Parent employment status | |
| Full-time | 82.1% |
| Half-time | 17.8% |
| Child birth order | |
| First born | 63.1% |
| Middle child | 17.4% |
| Youngest child | 14.7% |
| Only child | 4.8% |
| Child gender | |
| Girls | 58.2% |
| Boys | 41.8% |

**2. Data Collection**

An online survey was conducted among parents of preschoolers. Data were collected with an online questionnaire. Before starting the questionnaire, participants completed an online screener (to confirm the inclusion criteria, agreed to a written consent form regarding anonymity, aggregated data analysis and reporting, and a demographic questionnaire. During this process, participants were required to confirm that they had read the Explanatory Statement and were therefore fully informed about the purpose of the study.

The online questionnaire was designed based on a review of studies (Vittrup et al., 2016; Genc, 2014; Brito et al., 2018). The first part consisted of descriptive questions about a child (gender, age, position in a family regarding being the first, second, or single child) and descriptive questions about a parent (parent education, marital status, age). The second part of the questionnaire consisted of questions about parents' perceptions of technology.

**3. Measures**

1) Demographic information

   Parents responded to demographic questions about themselves (e.g., parental age, education), their families (e.g., parent employment status), and the target child (e.g., gender, age).

*2)* Parent's perceptions of technology

The 15-item Parental Perceptions of Technology Scale (PPTS; Sanders et al., 2016) was developed for this study. Item content was developed from pilot research in a prevention context with parents who expressed concerns about their children's technology use. The PPTS scale reflects parents' beliefs about electronic media devices (i.e., TVs, computers, video game consoles, and tablets) and their perceived efficacy in managing these devices. The attitudes about technology subscale included items representing general likes and dislikes of technology. The Perceived Parental Efficacy subscale included items about general perceptions of technology use. Parents indicated their level of agreement with each of the 15 items on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Items were summed for the Attitudes about Technology subscale. For the Perceived Parental Efficacy subscale, items were reverse-coded so that higher scores reflected more efficacy with technology.

3) Data analytic plan

Preliminary analysis of demographic and study variables

The effect of demographic variables (i.e., parent age, parent race, parent education, marital status, youth age, and youth gender) on the primary outcomes was examined using bivariate correlations. We examined all demographic variables as covariates as there is limited research on the role of these variables in technology use studies. This approach is conservative but appropriate for the field's development stage at the current time.

## Result and Discussion

### 1. Preliminary analysis

Family ownership percentage and youth weekly mobile usage for each technology device by children's developmental stage and gender are presented in Table 3. Average mobile usage summed across all devices varied. Prior to preliminary analyses, three demographic variables were dichotomized based on sample size in groups and inspection of the means. Race was dichotomized to Pontianak native tribe (1) and immigrant tribe (2), marital status was dichotomized to single (1) or married (2), and parent education was dichotomized to college (1) or no college degree (2).

More than half of the parents reported having three or more screen devices in households. Nearly 69% of the children had access to one or two screen devices at home. The most commonly used devices were tablets with other devices such as computers, TV or DVDs, smartphones, and video game consoles.

**Table 2**
Family ownership percentage and youth weekly mobile usage in hours for each device by dataset

| | Children | | |
|---|---|---|---|
| | % own | Boys | Girls |
| Watching TV or DVDs | 83.2% | 0.9 | 0.5 |
| Using computer | 53.2% | 1.3 | 0.6 |
| Video games | 63.2% | 1.5 | 1.3 |
| Tablet computer | 72.1% | 2.9 | 2.7 |
| Smartphone (not talking) | 59.7% | 1.5 | 1.6 |

**2. Primary analyses**

Parent's attitudes about technology were correlated with their perceived parental efficacy with technology. Parents who perceived themselves as efficacious in managing technology reported using more technology-related parenting strategies (e.g., setting and enforcing rules around their young child's technology use). The use of technology-related parenting strategies was related to young children's mobile usage such that higher levels of setting and enforcing rules about their child's technology use were related to lower levels of children's mobile usage. Furthermore, greater parental perceived parental efficacy with technology, but not parent attitudes about technology, related to children's mobile usage.

In this study we examined the associations between parental perceptions about technology and children's daily mobile usage. We found that children are spending substantially greater time in front of a screen (8.5 h) more than recommended by the American Academy of Pediatrics (Strasburger & Hogan, 2013). Our findings may be inflated due to children viewing multiple screens at once; however, even with this caveat, mobile usage constitutes a major portion of children's day. Not surprisingly, mobile usage increases by approximately an hour per day as children move across the developmental age. Previous studies indicated that toddlers and pre-schoolers have

increasing screen ownership and time spent (Byrne et al., 2021). It is consistent with Goh et al. (2015) statement that the increasing amount of time children spend on technological devices at home has raised concerns about the impact of these activities on their development. This condition is certainly not good for child development. Kerai et al. (2022) said that children who exceeded the daily recommended mobile usage limits were more likely to be vulnerable in social, emotional, physical, and cognitive development.

One of the major challenges of contemporary parenting is children's screen use (Ophir et al., 2021). Children's behavior or development is affected by their caregivers, such as their parents and relatives' electronic media usage (Chaibal & Chaiyakul, 2022). Parents may not impose rules around their child's mobile usage because they consider their own media use enjoyable and are reluctant to make these changes (Jordan et al., 2006). Parents frequently use mobile devices in response to boredom or stress (Radesky et al., 2014), to work commitments (Duxbury & Rob, 2011), to overcome loneliness or isolation (McDaniel & Radesky, 2018a), and to fulfill childcare responsibilities (Hiniker et al., 2015). Further, an assessment of the relationship between parent technology use and child behavior found that more than 50% of mothers recalled their devices intruding during mother-child activities (McDaniel & Radesky, 2018a). Therefore, it can be concluded that parental mobile device use is frequent and occurs when parents play with or supervise children. All that research, in line with the findings that from the participant's point of view that they may become absorbed or distracted by their devices while engaging with or supervising children. They become absorbed by devices and may not be able to simultaneously engage with a device and children at the same time. To sum up, parents describe difficulties responding appropriately to children and interpreting their cues while distracted by devices. This situation may create a state of absent presence – where an individual is physically present but emotionally and cognitively unavailable so that these conditions interfere with interaction and emotional bonding when playing with children. It will not happen if parents build behavioral confidence by mastery of skills to find alternatives to mobile usage in caring for their children. Parents should spend more time playing and reading with their children (M. Sharma et al., 2021).

It seems that most parents consider mobile evolution useful and inevitable for their children. Moreover, study results show that parents want to support their

children's learning and seek to create and strengthen a learning environment for their children in their homes. Furthermore, this study reveals that parents are challenged by their children's use of digital devices. As the studies have found, parents struggle to understand where the line lies between constructive use of digital technologies that can support their children's learning and the unhealthy use of these devices. In general, parents consider their children's engagement with smart mobile devices as a means to improve learning outcomes and entertainment, although they are unaware of how to best utilize digital technology. To resolve the confusion, parents need to be convinced that their children can learn new technology, find adequate stimulation for sound cognitive development, and find adequate and suitable programming for developing literacy (3Rs) skills without overspending time in front of the screen (M. Sharma et al., 2021).

Parent's perceptions of their efficacy with media devices not only directly relate to their technology-related parenting strategies but may influence how they talk about these devices with their children and, subsequently, how their children perceive the devices.

In this way, and consistent with a family systems framework, parental perceptions of media devices may be important for the climate of media use in the household. That is, what is important in determining media use in the home may go beyond technology-related parenting practices. From a family systems perspective, individual level variables, such as parental beliefs and attitudes about technology, can influence children's mobile usage not only through the dyadic interchange around technology-related parenting and children's mobile usage but through other mechanisms not assessed in this study.

## Conclusion

Most previous studies on screen usage interventions have focused on adolescents or college students; however, few studies have focused on children. The present results indicate that parents should have greater attention to children because the problems associated with prolonged mobile usage displayed an earlier onset than has been previously reported. Indeed, the most effective method of inculcating appropriate

development among children is to offer models from their parents, appropriate behavioral constraints, and parent–child interactions in their daily lives. The models provide an effective parental educational intervention program to reduce screen use among preschoolers. This education program effectively improved parents' knowledge, attitudes, and self-efficacy regarding children's screen use, and the parents will be aware of children's screen behavior and its impact on their development.

*Recommendation for intervention*

Likewise, practice for change construct also needs to be built into interventions by providing the parents with a monitoring tool such as an app or another method of recording the total time spent in front of the screen and regulating it. Finally, the construct of changes in the social environment can be influenced by mobilizing natural social support in the form of family and friends who can provide alternatives to mobile usage. The artificial social support that can come from health professionals or researchers in the form of reminders, text messages, and other such means to sustain the habit of reducing mobile usage behavior in preschoolers would also be useful.

Based on the findings, we know that parents reported having three or more screen devices in households, and the children had access to one or two screen devices at home. These circumstances require major changes, where the changes are in the physical environment by restricting the use of screen devices at home for children.

We suggest that in the future, we should provide parental educational interventions and mobile usage instruction manuals for children to help effectively reduce their mobile usage. Hopefully, parental educational interventions can allow parents and children to broaden their horizons, understand and enhance behavioral attitudes, facilitate knowledge and skill development, enhance parent–child relationships, and promote appropriate development for the children.

*Limitations*

This study had several limitations. First, the parents' reports of mobile usage were potentially influenced by their understanding of the study objectives (i.e., the reduction of mobile usage). Second, our study only focused on parents living in urban areas. Parents' understanding of mobile usage for children in rural areas, remains unclear. Third, parental reports of mobile usage among children might have led to the results being over−/underestimated. Certain objective devices, including ACTi graph units, would be beneficial in the future.

## References

Anjali, Mohapatra, I., & Banerjee, A. (2020). Screen dependency disorders in children under two years of age: A parent report measure. *Indian Journal of Community Health*, *32*(2), 427–431. https://doi.org/10.47203/ijch.2020.v32i02.022

Ardiyani, I. D., Setiawati, Y., & Hsieh, Y.-T. (2021). Education for Parents of Children with Gadget Addiction. *Jurnal Berkala Epidemiologi*, *9*(3), 221. https://doi.org/10.20473/jbe.v9i32021.221-230

Biddiss, E., & Irwin, J. (2010). Active video games to promote physical activity in children and youth: A systematic review. *Archives of Pediatrics and Adolescent Medicine*, *164*(7), 664–672. https://doi.org/10.1001/archpediatrics.2010.104

Biddle, S. J. H., Pearson, N., Ross, G. M., & Braithwaite, R. (2010). Tracking of sedentary behaviours of young people: A systematic review. *Preventive Medicine*, *51*(5), 345–351. https://doi.org/10.1016/j.ypmed.2010.07.018

Brito, R., Dias, P., & Oliveira, G. (2018). Young children, digital media and smart toys: How perceptions shape adoption and domestication. *British Journal of Educational Technology*, *49*(5), 807–820. https://doi.org/10.1111/bjet.12655

Byrne, R., Terranova, C. O., & Trost, S. G. (2021). Measurement of screen time among young children aged 0–6 years: A systematic review. *Obesity Reviews*, *22*(8), 1–28. https://doi.org/10.1111/obr.13260

Chaibal, S., & Chaiyakul, S. (2022). The association between smartphone and tablet usage and children development. *Acta Psychologica*, *228*(June), 103646. https://doi.org/10.1016/j.actpsy.2022.103646

Chia, M. (2008). *Physical inactivity among children and adolescents in Singapore : A paradoxical issue*. *2*(2), 7–15. https://repository.nie.edu.sg/bitstream/10497/14242/1/AK-2-2-7.pdf

Chia, M. Y. H., Komar, J., Chua, T. B. K., & Tay, L. Y. (2022). Associations between Parent Attitudes and on- and off-Screen Behaviours of Preschool Children in Singapore. *International Journal of Environmental Research and Public Health*, *19*(18), 1–18. https://doi.org/10.3390/ijerph191811508

Duxbury, L., & Rob, S. (2011). *The "Myth of Separate Worlds": An Exploration of How Mobile Technology has Redefined Work-Life Balance*. *1964*, 1–328. https://doi.org/10.1007/978-3-642-16199-5

F.Hadary, D. Y. & R. W. (2019). Multimedia Interaktif dalam Pembelajaran di Taman Kanak-kanak Kota Pontianak Kalimantan Barat. *Jurnal Al-Khidmah*, *2*(2), 42–48.

Fisch, S. M., Truglio, R. T., & Cole, C. F. (1999). The Impact of Sesame Street on Preschool Children: A Review and Synthesis of 30 Years' Research. *Media Psychology*, *1*(2), 165–190. https://doi.org/10.1207/s1532785xmep0102_5

Genc, Z. (2014). Parents' Perceptions about the Mobile Technology Use of Preschool Aged Children. *Procedia - Social and Behavioral Sciences*, *146*, 55–60. https://doi.org/10.1016/j.sbspro.2014.08.086

Goh, W. W. L., Bay, S., & Chen, V. H. H. (2015). Young school children's use of digital devices and parental rules. *Telematics and Informatics*, *32*(4), 787–795. https://doi.org/10.1016/j.tele.2015.04.002

Groves, C. L., & Anderson, C. A. (2016). Handbook of Digital Games and Entertainment Technologies. *Handbook of Digital Games and Entertainment Technologies*, 1–26. https://doi.org/10.1007/978-981-4560-52-8

Hadary F, Yuniarni Desni, Wulandari RS, S. S. (2018). Program Kemitraan Masyarakat Taman Kanak-Kanak Kota Pontianak Kalimantan Barat. *Buletin Al Ribaath, Universitas Muhammadiyah Pontianak*, *15*(1), 2579–9495. https://doi.org/10.1017/CBO9781107415324.004

Hill, D., Ameenuddin, N., Chassiakos, Y. R., Cross, C., Radesky, J., Hutchinson, J., Boyd, R., Mendelson, R., Moreno, M. A., Smith, J., & Swanson, W. S. (2016). Media and young minds. *Pediatrics*, *138*(5). https://doi.org/10.1542/peds.2016-2591

Hiniker, A., Sobel, K., Suh, H., Sung, Y.-C., Lee, C. P., & Kientz, J. A. (2015). *Texting while Parenting: How Adults Use Mobile Phones while Caring for Children at the Playground*. 727–736. https://doi.org/10.1145/2702123.2702199

Hu, B. Y., Johnson, G. K., & Wu, H. (2018). Screen time relationship of Chinese parents and their children. *Children and Youth Services Review*, *94*, 659–669. https://doi.org/10.1016/j.childyouth.2018.09.008

Huang, H. M., Chang, D. S. T., & Wu, P. C. (2015). The association between near work activities and myopia in children - A systematic review and meta-analysis. *PLoS ONE*, *10*(10), 1–15. https://doi.org/10.1371/journal.pone.0140419

Işıkoğlu, N., Erol, A., Atan, A., & Aytekin, S. (2021). A qualitative case study about overuse of digital play at home. *Current Psychology*. https://doi.org/10.1007/s12144-021-01442-y

Jordan, A. B., Hersey, J. C., McDivitt, J. A., & Heitzler, C. D. (2006). Reducing children's television-viewing time: A qualitative study of parents and their children. *Pediatrics*, *118*(5). https://doi.org/10.1542/peds.2006-0732

Kerai, S., Almas, A., Guhn, M., Forer, B., & Oberle, E. (2022). Screen time and developmental health: results from an early childhood study in Canada. *BMC Public Health*, *22*(1), 1–9. https://doi.org/10.1186/s12889-022-12701-3

Konca, A. S. (2022). Digital Technology Usage of Young Children: Screen Time and Families. *Early Childhood Education Journal*, *50*(7), 1097–1108. https://doi.org/10.1007/s10643-021-01245-7

Kushlev, K., & Dunn, E. W. (2019). Smartphones distract parents from cultivating feelings of connection when spending time with their children. *Journal of Social and Personal Relationships*, *36*(6), 1619–1639. https://doi.org/10.1177/0265407518769387

Kusumaningtyas, W., Ikhwan Aziz, Q., Laili, N., & Hartati, S. (2019). Gestalt-prophetic: The parenting method for early childhood with gadgets addiction. *Islamic Guidance and Counseling Journal*, *2*(2), 66–76. https://doi.org/10.25217/igcj.v2i2.391

Li, H., Luo, W. W., & He, H. H. (2022). Association of Parental Screen Addiction with Young Children's Screen Addiction: A Chain-Mediating Model. *International Journal Of Environmental Research And Public Health*, *19*(19). https://doi.org/10.3390/ijerph191912788

McDaniel, B. T., & Radesky, J. S. (2018a). Technoference: longitudinal associations between parent technology use, parenting stress, and child behavior problems. *Pediatric Research*, *84*(2), 210–218. https://doi.org/10.1038/s41390-018-0052-6

McDaniel, B. T., & Radesky, J. S. (2018b). Technoference: Parent Distraction With Technology and Associations With Child Behavior Problems. *Child Development*, *89*(1), 100–109. https://doi.org/10.1111/cdev.12822

OCDE. (2018). Children & Young People ' s Mental Health in the Digital Age. *Oecd*, 16. http://www.oecd.org/els/health-systems/Children-and-Young-People-Mental-Health-in-the-Digital-Age.pdf

Ophir, Y., Rosenberg, H., & Tikochinski, R. (2021). What are the psychological impacts of children's screen use? A critical review and meta-analysis of the literature underlying the World Health Organization guidelines. *Computers in Human Behavior*, *124*(March 2020), 106925. https://doi.org/10.1016/j.chb.2021.106925

Perez, O., Vadathya, A. K., Beltran, A., Barnett, R. M., Hindera, O., Garza, T., Musaad, S. M., Baranowski, T., Hughes, S. O., Mendoza, J. A., Sabharwal, A., Veeraraghavan, A., & O'Connor, T. M. (2022). The Family Level Assessment of Screen Use-Mobile Approach: Development of an Approach to Measure Children's Mobile Device Use. *JMIR Formative Research*, *6*(10). https://doi.org/10.2196/40452

Puspa, F. (2019). Intensitas Penggunaan Gadget Dan Aktivitas Motorik Anak Usia 4-6 Tahun Di Kota Pontianak. *Altius: Jurnal Ilmu Olahraga Dan Kesehatan*, *8*(2), 2–9. https://doi.org/10.36706/altius.v8i2.9980

Rabbani, M., Hosseinian, S., & Zulkharnain, N. H. B. (2022). Screen Time and Psychological Well-Being among Children: The Moderating Effect of Parenting Styles. *Journal of Cognitive Sciences and Human Development*, *8*(2), 199–208. https://doi.org/10.33736/jcshd.4555.2022

Radesky, J. S., Kistin, C. J., Zuckerman, B., Nitzberg, K., Gross, J., Kaplan-Sanoff, M., Augustyn, M., & Silverstein, M. (2014). Patterns of mobile device use by caregivers and children during meals in fast food restaurants. *Pediatrics*, *133*(4). https://doi.org/10.1542/peds.2013-3703

Sanders, W., Parent, J., Forehand, R., Sullivan, A. D. W., & Jones, D. J. (2016). Parental perceptions of technology and technology-focused parenting: Associations with youth screen time. *Journal of Applied Developmental Psychology*, *44*, 28–38. https://doi.org/10.1016/j.appdev.2016.02.005

Sari, D. N. (2020). An Analysis of the Impact of the Use of Gadget on Children's Language and Social Development. *Proceedings of the International Conference of Early Childhood Education (ICECE 2019)*, *449*(Icece 2019), 201–204. https://doi.org/10.2991/assehr.k.200715.041

Sharma, M., Batra, K., Singh, T. P., Dua, R., Ickes, M., Batra, R., & Nahar, V. K. (2021). Explaining Screen-Time Behavior Among Preschoolers in Northern India Using Multi Theory Model: A Parental Cross-Sectional Survey. *INTERNATIONAL QUARTERLY OF COMMUNITY HEALTH EDUCATION*. https://doi.org/10.1177/0272684X211006604

Sharma, S. K. (2018). Screen Dependency Disorders (SDD): An Innovative Contest for Brain of Children. *Global Journal of Addiction & Rehabilitation Medicine*, *6*(1), 7–8. https://doi.org/10.19080/gjarm.2018.06.555677

Sigman, A. (2017). Screen Dependency Disorders: a new challenge for child neurology. *Journal of the International Child Neurology Association*, *May*. https://doi.org/10.17724/jicna.2017.119

Srinahyanti, S., Wau, Y., Manurung, I., & Arjani, N. (2019). *Influence of Gadget: A Positive and Negative Impact of Smartphone Usage for Early Child*. https://doi.org/10.4108/eai.3-11-2018.2285692

Strasburger, V. C., & Hogan, M. J. (2013). American Academy of Pediatrics: Children, adolescents, and the media. *Pediatrics*, *132*(5), 958–961. https://doi.org/10.1542/peds.2013-2656

Trinika, Y. (2015). Yulia trinika i32111036 skripsi. *Jurnal ProNers*, *Vol 3*(1). https://doi.org/DOI: http://dx.doi.org/10.26418/jpn.v3i1.11001

Vittrup, B., Snider, S., Rose, K. K., & Rippy, J. (2016). Parental perceptions of the role of media and technology in their young children's lives. *Journal of Early Childhood Research*, *14*(1), 43–54. https://doi.org/10.1177/1476718X14523749

Widayanti, T. (2019). Dampak Negatif Perkembangan Teknologi Informasi dan Komunikasi bagi Proses Tumbuh Kembang Anak. *Sindimas*, *1*(1), 118–122. http://sisfotenika.stmikpontianak.ac.id/index.php/sindimas/article/view/548/354

Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., Golinkoff, R. M., Baum, R., Gambon, T., Lavin, A., Mattson, G., & Wissow, L. (2018). The power of play: A pediatric role in enhancing development in young children. *Pediatrics*, *142*(3). https://doi.org/10.1542/peds.2018-2058

Yuniarni, D. (2019). The Teacher's Perception to the Impact of Playing Gadget for Early Childhood's Mental Health. *JETL (Journal Of Education, Teaching and Learning)*, *4*(2), 350.

https://doi.org/10.26737/jetl.v4i2.1648

Yuniarni, D., Sari, R. P., & Atiq, A. (2019). Pengembangan Multimedia Interaktif Video Senam Animasi Berbasis Budaya Khas Kalimantan Barat. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, *4*(1), 290. https://doi.org/10.31004/obsesi.v4i1.331