

Screen Time and Early Childhood Well-Being: A Systematic Literature Review Approach

Vivi Irzalinda^{1,2*}, Melly Latifah³

¹Early Childhood Education Programs, Faculty of Teacher Training and Education, Lampung University, Jl. Prof. Dr. Soemantri Brodjonegoro No 1 Gedong Meneng, Bandar Lampung 35141, Indonesia

²Doctoral Program of Family Science, Faculty of Human Ecology, IPB University, Jl. Kamper, IPB Dramaga Bogor Campus, Bogor, West Java 16880, Indonesia

³Department of Family and Consumer Sciences, Faculty of Human Ecology, IPB University, Jl. Kamper, IPB Dramaga Bogor Campus, Bogor, West Java 16880, Indonesia

*Corresponding author: viviirzalinda@fkip.unila.ac.id

Abstract

The technological advancements of the 21st century have created a shift in learning experiences for children, exposing them to various digital devices from an early age. One of the keys to a prosperous future for children is knowing the impact of screen time on children's well-being. This systematic literature review aims to provide an overview of the influence of screen time on early childhood well-being from existing empirical evidence. Using the PRISMA principles, this literature review identified 23 relevant studies from Scopus-indexed articles (Q1-Q4). The research subjects were children and mothers. The analysis grouped themes and displayed the interconnectedness of emerging themes using VosViewer software. The results of the systematic literature review showed that, generally, screen time hurts early childhood well-being in the physical and psychosocial dimensions. The impact of screen time on the cognitive dimension is negative and positive. The negative impact of screen time on the cognitive dimension of early childhood well-being includes delays in early childhood language development. Meanwhile, the positive impact of screen time on the cognitive dimension of early childhood well-being is that the media and tools in learning become more attractive. The results of this literature review have implications for providing insight to various stakeholders about the impact of screen time on early childhood well-being in various conditions.

Keywords: child well-being, early childhood, language development, screen time, systematic literature review

Abstrak

Kemajuan teknologi abad ke-21 telah menciptakan pergeseran dalam pengalaman belajar bagi anak, sehingga membuat anak terpapar dengan beragam perangkat digital sejak usia dini. Salah satu kunci masa depan anak sejahtera dengan mengetahui dampak screen time terhadap kesejahteraan anak. Tinjauan literatur sistematis ini bertujuan memberikan gambaran umum mengenai pengaruh *screen time* terhadap kesejahteraan anak usia dini dari bukti-bukti empirik yang ada. Dengan menggunakan prinsip-prinsip PRISMA, tinjauan literatur ini berhasil mengidentifikasi 23 penelitian relevan yang berasal dari artikel terindeks scopus (Q1-Q4). Subjek penelitian adalah anak dan ibu. Analisis pengelompokan tema dan menampilkan keterkaitan tema-tema yang muncul dengan menggunakan software VosViewer. Hasil tinjauan literatur sistematis menunjukkan bahwa umumnya *screen time* berdampak negatif *screen time* terhadap kesejahteraan anak usia dini pada dimensi fisik dan psikososial. Dampak *screen time*

pada dimensi kognitif bersifat negatif dan positif. Dampak negatif *screen time* terhadap dimensi kognitif kesejahteraan anak usia dini antara lain keterlambatan dalam perkembangan bahasa anak usia dini. Sementara itu, dampak positif *screen time* terhadap dimensi kognitif kesejahteraan anak usia dini yaitu media dan alat bantu dalam pembelajaran menjadi lebih menarik. Hasil tinjauan literatur ini berimplikasi pada pentingnya memberikan wawasan kepada berbagai pemangku kepentingan tentang dampak *screen time* terhadap kesejahteraan anak usia dini dalam berbagai kondisi.

Kata kunci: anak usia dini, kesejahteraan anak, perkembangan bahasa, *screen time*, *systematic literature review*

Introduction

Technological advances in the 21st century have created a tremendous shift in learning experiences for children (Kim et al., 2021; Kucirkova et al., 2019). The ubiquity of technology in our daily lives has exposed children to a wide array of digital devices from an early age. This high exposure has turned 21st-century children into a generation of digital natives who naturally use technology in their daily lives in both formal and informal settings (Sharkins et al., 2016).

In recent years, the world has faced the COVID-19 pandemic, which has caused problems in early childhood. One is that children's screen time increases (Pratiwi, 2020). Widiputera, Perdana, and Zamjani's research (2019) revealed that gadgets in Indonesian children before the pandemic averaged 7 hours 59 minutes daily. During the COVID-19 pandemic, 25.4 percent of early childhood use gadgets outside of learning interests, namely more than 5 hours per day (KPAI 2021).

In contrast, children in the United States spend an average of 2 hours per day in front of screens playing on cell phones, tablets, or TVs. However, pediatricians have recommended that children only spend 1 hour per day in front of screens, which has a positive impact on their development. Some data found that excessive screen time negatively affects children's behavioral, cognitive, and physical well-being. Early exposure to gadgets is also suspected as one of the factors leading to Attention Deficit Hyperactivity Disorder (ADHD) in early childhood. When children spend most of their time playing with gadgets, they engage in less physical activity, leading to obesity at an early age. The results of the study also reported experiencing headaches in the morning after spending most of the day playing with cell phones or gadgets (Hegde et al., 2019). Children are also prone to gadget addiction because they have poor coping mechanisms. Thus, they tend to seek out activities they are interested in without considering the harmful effects (Madigan et al., 2019).

The lightweight design and touch-based digital interface of touchscreens allow very young children to engage interactively with digital content (Plowman et al., 2012). Moreover, the potential of touchscreens to facilitate personalized, flexible, and mobile learning experiences, as well as individualized assessment and rich communication (Mehdipour & Zerehkai, 2013), has led to the introduction of these devices into school environments for educational purposes (McLean, 2016).

Screen time (electronic screen exposure) refers to time spent on screen-based behaviors that can be performed while sedentary or physically active (Tremblay et al., 2017). In recent years, there has been a significant increase in the accessibility of digital

technologies and a potentially worrying trend of increasing sedentary screen time and gadget use, especially for younger generations (Bohnert & Gracia, 2021). Increased screen time is associated with several adverse health and well-being indicators in young populations. Several studies have found adverse health associations with adiposity (Cadogan et al., 2013; Saunders & Vallance, 2017; Stiglic & Viner, 2019; Tripathi & Mishra, 2020) and cardiorespiratory fitness (Saunders & Vallance, 2017; Stiglic & Viner, 2019), depression and mental health (Stiglic & Viner, 2019; Liu et al., 2016), diet and quality of life (Stiglic & Viner, 2019), lower academic achievement (Stiglic & Viner, 2019; Dempsey et al., 2019), sleep (Stiglic & Viner, 2019; Hale & Guan, 2015), and lower levels of physical activity (Cadogan et al., 2013; Garcia et al., 2016). Meanwhile, longitudinal studies have found that increased screen time in leisure time leads to lower psychological well-being (Przybylski & Weinstein, 2019; Thomas et al., 2020).

The key to children's future is knowing the causes and effects of screen time on children's well-being (Przybylski & Weinstein, 2019). According to Zaff et al. (2003), child well-being is understood as a whole, as well as conditions that cannot be separated. Child well-being is a multidimensional construct incorporating mental/psychological, physical, and social dimensions (Columbo, 1986). According to Schor (1995), child health and well-being are directly related to the family's ability to provide essential physical, emotional, and social needs. In addition, physical, mental, and social dimensions can be found in almost every list of child well-being domains. However, mental well-being is often decentralized into several domains, such as psychological and cognitive (Pollard & Lee, 2003).

The first component of child well-being is physical well-being. Proper diet, exercise, or other activities that promote physical health, a sense of safety and security, and avoidance of substance addiction are essential components of this dimension (Zaff et al., 2003). In addition, feeling safe and comfortable and self-actualization in the absence of fear or anxiety (Feist et al., 2013). Socio-emotional well-being includes the development of autonomy and trust, personal maturity, such as identity, self-concept, self-esteem, emotion regulation, coping skills, the development of empathy and sympathy, and the formation of positive relationships with others (Zaff et al., 2003; Seligman, 2011). Children's cognitive well-being includes their capacity to engage in meaningful activities, adjust to their surroundings, express their views, and solve problems (Zaff et al., 2003).

The increase in screen time in early childhood gives special consideration to the importance of investigating the impact of screen time on young children's overall well-being. To provide an overview of the existing evidence regarding the impact of screen time on early childhood well-being and describe current research trends in the area, a systematic literature review was required. In this systematic literature review, the research questions include: (1) What are the linkages and clusters of research themes in the last three years? (2) What are the negative and positive impacts of screen time on early childhood well-being?

Methods

Participants

This research design uses a systematic literature review approach. The sample respondents in this systematic literature review were early childhooders aged 2-6 years and parents. The number of samples taken from 23 articles was 38,295 respondents. This study aims to review scientific articles that discuss the impact of screen time on early childhood well-being. The articles reviewed in this study have gone through three stages, namely: (1) article search, (2) theme mapping, and (3) analysis. The following is the flow of article selection using the PRISMA method.

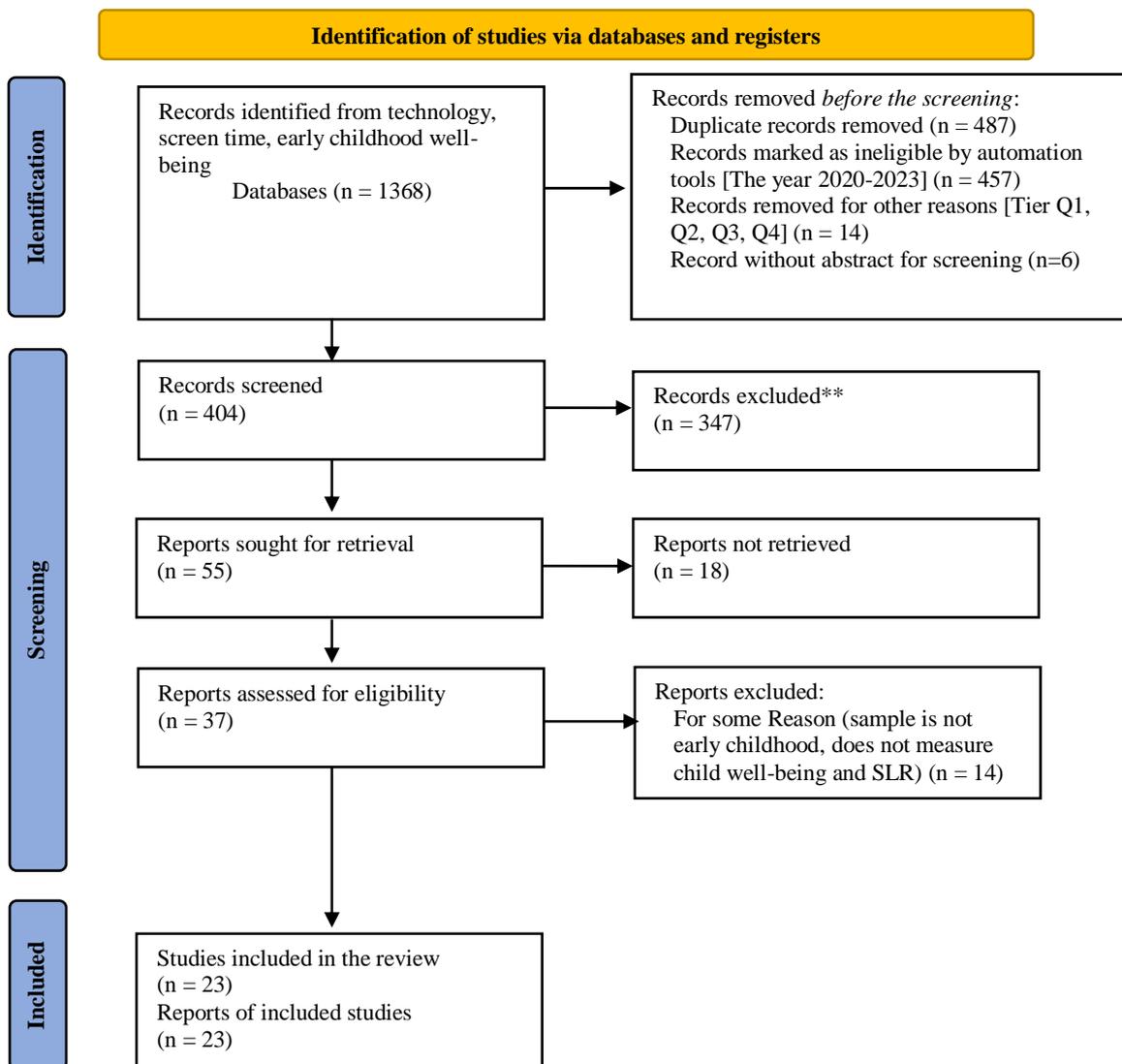


Figure 1. PRISMA diagram

The article search was conducted through several stages using the PRISMA method, namely: 1) through Watase Uake software with Scopus database (Q1-Q4) with keywords: "screen time" "technology" "early childhood" "well-being" published from 2020 to 2023 with search results there are 1368 journals, 2) based on the objectives of

this study, from 55 journal articles that have been found, then re-selected, there are 31 articles that do not match the criteria of early childhood so that 23 journal articles are taken for analysis, and 3) the search results are then stored with the RIS/Reference Manager type, which will later be used for the theme mapping stage. At the theme mapping stage, the articles that have been searched are then entered into the VosViewer software to see the results of the theme group analysis and display the relationship of the themes that appear.

Measurement

There were 23 articles analyzed. This study examined the variables of screen time and child well-being. Screen time in this study is viewing or using anything with a screen, including TV, DVD, video games, and computers (Schwarzer et al., 2012). Child well-being is a multidimensional construct incorporating mental/psychological, physical, and social dimensions (Columbo, 1986). According to Schor (1995), children's health and well-being are directly related to the family's ability to provide essential physical, emotional, and social needs. Zaff et al. (2003) also revealed that there are three main aspects of well-being, namely physical, socioemotional, and cognitive. Similarly, Karyani et al. (2015) identified six domains of well-being. The six domains are physical, cognitive, emotional, personal, social, and spiritual. Thus, child well-being in this study is the family's ability to provide for children's needs, including physical, cognitive, social, psychological/emotional, and spiritual.

Analysis

The data analysis stage is the stage to produce data that answers the research questions. In addition, at this stage, the analysis focused on cluster analysis, mapping the themes of handling screen time on early childhood well-being. Based on the 23 journal articles analyzed, the resulting impact of screen time on early childhood well-being is grouped based on the dimensions of early childhood well-being, namely physical, cognitive, social-emotional, and spiritual.

Findings

Linkages and Theme Clusters

Based on the selected journal articles and through the review process using the VOSviewer application to obtain a set of related theme clusters (Figure 2). The result is that are 10 clusters represented by 10 different color codes according to the themes that emerge from the journals. The research themes for the last three years are parent-child interaction, cognitive, health school, sleep, physical activity, eating behavior, family meals, emotional and behavioral problems, family adversity, psychological well-being, and peer.

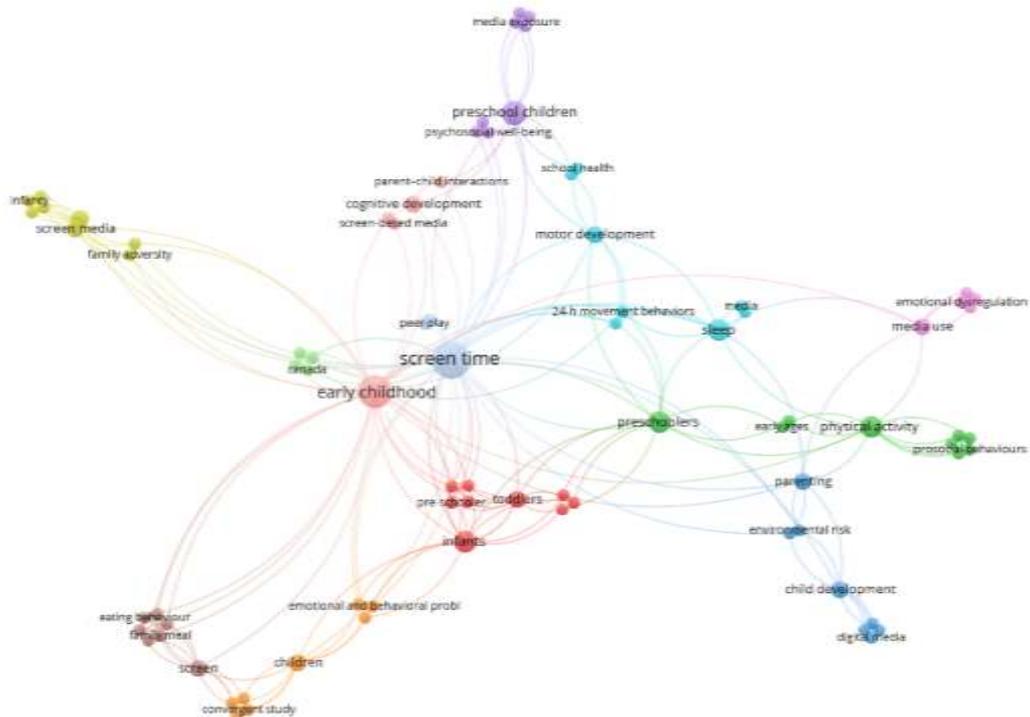


Figure 2. Network visualization based on vosviewer

Overlay Visualization

The yellow clusters are newly conducted research (2023). Meanwhile, the green, dark blue and purple clusters are old research clusters researched in the last three years.

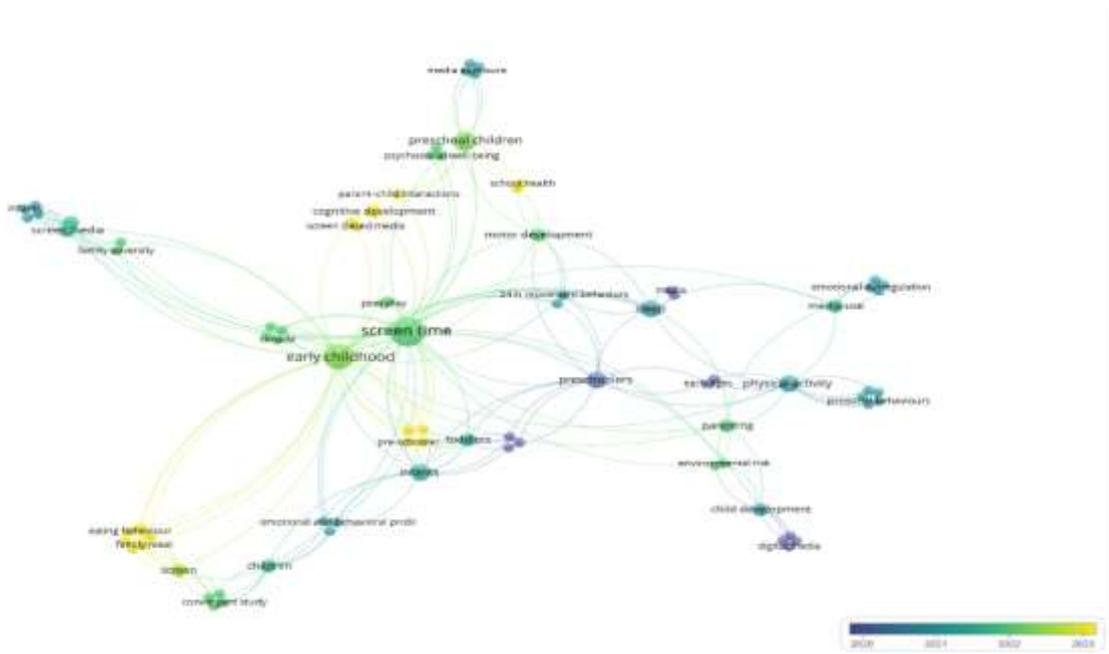


Figure 3. Overlay visualization

Density Visualization

Based on the results of the Vosviewer analysis, it can be seen that the density of research is yellow, which is located near the center of screen time. At the same time, infrequent research is located far outside and colored green. From the results, some themes are rarely researched, including parenting roles, parenting control, school health, health indicators, motor development, emotions and behavior problems, family adversity, and environmental risks.

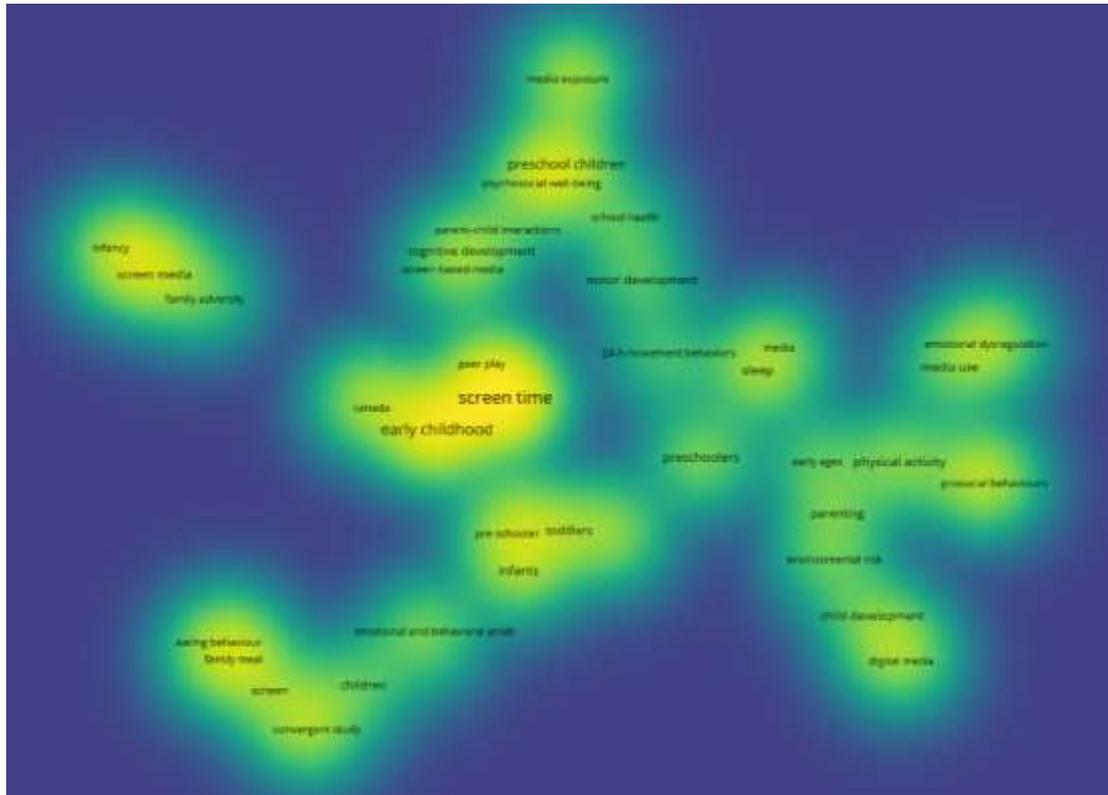


Figure 4. Density visualization

Article Review

Based on the search for journal articles related to the impact of screen time on early childhood well-being, 23 journal articles were obtained that were in accordance with the research topic. The review of these journal articles can be seen in Table 1.

Table 1. Results of article review analysis

Code	Researcher	Dimension of Child Well-being	Sample Size	Sample	Country	Methods
C1	(Carballo-Fazanes, Díaz-Pereira, Fernández-Villarino, Abelairas-Gómez, & Rey, 2023)	Physical	57	Child	Spain	Observational
C2	(Kim et al., 2021)	Physical	103	Child	Vietnam	Observational
C3	(Litterbach, Laws, Zheng, Campbell, & Spence, 2023)	Physical	25	Mom	Australian	Interview
C4	(Zhang et al., 2021)	Physical	206	Child	Canada	Mix method
C5	(Manousaki et al., 2020)	Physical	630	Child	Canada	Observational
C6	(Vale & Mota, 2020)	Physical	739	Child	Portugal	Interview
C7	(Kerai, Almas, Guhn, Forer, & Oberle, 2022)	Physical	2,983	Child	Canada	Interview
C8	(Rai et al., 2023)	Physical	542	Child	Canada	Interview
C9	(Hu, Chiu, Leung, & Yelland, 2021)	Physical	971	Child	China	Interview
C10	(Chia, Komar, Chua, & Tay, 2022)	Physical	1,481	Parents	Singapore	Interview
C11	(Tezol, et al., 2022)	Psychosocial	220	Mother and child	Turkey	Observational
C12	(Neville, Nelson, Madigan, Browne, & Lakes, 2021)	Psychosocial and Physical	18,787	Child	Irish	Interview
C13	(Coyne et al., 2021)	Psychosocial	269	Parents	American	Observational
C14	(McArthur, Browne, Racine, Tough, & Madigan, 2022)	Psychosocial	1,992	Child	Canada	Observational
C15	(Veziroglu-Celik, Acar, Kaygisiz, & Koc, 2022)	Psychosocial	113	Parents	Turkey	Mix method
C16	(Liu et al., 2021)	Psychosocial	2,492	Child	China	Interview
C17	(Fitzpatrick et al., 2022)	Psychosocial	581	Child	Canada	Interview
C18	(Paulus, Hübler, Mink, & Möhler, 2021)	Psychosocial	80	Child	Germany	Observational
C19	(McArthur, Browne, Tough, & Madigan, 2020)	Psychosocial and Cognitive	1,949	Child	Canada	Interview
C20	(Schwarzer, Grafe, Hiemisch, Kiess, & Poulain, 2022)	Cognitive and Psychosocial	296	Child	Germany	Interview
C21	(Putnick, et al., 2022)	Cognitive and Psychosocial	3,894	Child	American	Interview
C22	(Zhang, Wiebe, Rahman, & Carson., 2022)	Physical, cognitive	96	Child	Canada	Observational
C23	(Kaynar, Sadik, & Boichuk, 2020)	cognitive	13	Teacher	Turkey	Interview

Based on the results of the systematic literature review analysis (Table 1), it is known that the distribution of research countries includes Spain (n=1), Vietnam (n=1), Australia (n=1), Portugal (n=1), China (n=2), Germany (n=2), Canada (n=8), America (n=2), Turkey (n=3), Ireland (n=1), and Singapore (n=1). This means that many studies were conducted in Canada. Based on the sample analysis in this systematic literature review, it consists of parents (1,998 people), children (36,508 people), and teachers (13 people). The distribution of the number of samples by country in this systematic literature review shows that the distribution of research countries includes Spain (57 people), Vietnam (103 people), Australia (25 people), Portugal (739 people), China (3,463 people), Germany (376 people), Canada (8,979 people), America (4,163 people), Turkey (346 people), Ireland (18,787 people), and Singapore (1,481 people).

When analyzed based on research methods, several articles found, among others, observation (34.8%), interviews (56.5%), and mixed methods (8.7%). This means that the most widely used research method is interviews. When analyzed based on the dimensions of child welfare, it was found that the distribution of articles that conducted screen time research on physical child welfare (n=12), screen time on psychosocial child welfare (n=11), and screen time on cognitive child welfare research (n=5).

The impact of screen time on physical child well-being included the results of the prevalence of children meeting guidelines for physical activity time (50.4%), sleep duration (81.4%), and screen time (44.7%). A total of 17.5 percent of children met compliance with three guidelines (sleep activity, sleep duration, and screen time), while 5.8 percent did not meet guideline compliance (Kim et al., 2021). Meanwhile, the results of the study by Vale and Mota (2020) showed that the highest percentage of preschool children met sleep guidelines (80.6%), only about a third of preschool children met physical activity (28.6%) and a lower proportion met screen time guidelines (20.3%). Thus, the (more sleep, more outdoor time, low screen time) group exhibited the healthiest behaviors. In contrast, the group (little sleep, little outdoor time, high screen) showed unhealthy behaviors (Rai et al., 2023). The study's results (Carballo-Fazanes et al., 2023) revealed a relationship between screen time and physical activity. The results of this study also support the need for specific strategies to promote screen time and increase physical activity practices from an early age because this will have a direct impact on children's health in the coming years.

Litterbach, Laws, Zheng, Campbell, and Spence (2023) found that screen time at family mealtimes was associated with various child behaviors and parenting practices that negatively impacted children's food intake and social engagement. In addition, Hu, Chiu, Leung, and Yelland (2021) found that children who spent more screen time were more likely to be overweight.

The results of Zhang et al. (2021) found that non-Caucasian children from low-income families spend more time in front of the screen and tend to have shorter sleep duration. Manousaki et al. (2020) also stated that longer screen time during childhood has an adverse effect on shorter sleep duration. Therefore, daily screen time should not exceed the recommended one-hour limit, and screen-based activities should be limited for children (Kerai et al., 2022).

The impact of screen time on children's well-being in the psychosocial dimension includes the impact of digital media use, namely addiction (75-76%), poor vision (73%), access to inappropriate content (73-74%), lack of interaction between parents and children (65%), lack of sleep (49-55%), and lack of physical activity (55-59%) (Chia et al., 2022). In addition, the results of several studies state the presence of

emotional symptoms, behavioral problems, peer relationship problems, and peer relationship problems, as well as poor psychosocial well-being in children who use screen time excessively (Tezol et al., 2022; Paulus et al., 2021; Veziroglu-Celik et al., 2022; Liu et al., 2021). Meanwhile, the results of McArthur, Browne, Tough, and Madigan (2020) showed that consistent screen time resulted in higher aggression and inattentive behavior, poor social and life skills, and delayed achievement of language and motor skill development milestones at 60 months of age. These findings indicate the importance of controlling screen time to prevent emotional and behavioral problems in early childhood (Liu et al., 2021).

The results of Fitzpatrick et al. (2022) stated that increasing children's screen time at age 3.5 years significantly contributed to decreased emotional control at age 4.5 years, while reasonable control at age 3.5 years did not contribute to screen time at age 4.5 years. The results of this study suggest that higher levels of screen time are detrimental to the development of emotional control. In addition, Coyne et al. (2021) and Paulus, Hübler, Mink, and Möhler (2021) state that there is a relationship between children's emotion regulation with media and more extreme emotions when media is removed in toddlers. In addition, children's extreme temperament and emotions are mediated by media emotion regulation. There is an indirect effect of emotional and developmental risk with screen time in toddlers (McArthur et al., 2022).

The research results by Neville, Nelson, Madigan, Browne, and Lakes (2021) state that there is a relationship between screen time and behavioral problems that is significantly different between the two sexes. For boys, the relationship between increased screen time and increased behavior problems coincided directly with reduced frequency of physical activity. However, the relationship between screen time and behavioral problems was not moderated by girls' involvement in physical activity, and there was no difference in the relationship between screen time and prosocial behavior on physical activity frequency for both boys and girls.

The impact of screen time on cognitive child well-being includes that high screen time in young children (>1 hour/day) is significantly associated with lower gains in cognition, language, and social-emotional skills (Schwarzer et al., 2022). Screen time in early childhood does not replace time spent reading, but it does replace time spent playing with peers (Putnick et al., 2022). In addition, research by Kaynar, Sadik, and Boichuk (2020) states that the use of ebooks in early childhood increases students' reading interest and reading competence. Meanwhile, the research results by Zhang, Wiebe, Rahman, and Carson (2022) state that screen time mostly has no significant relationship, except for the positive relationship between meeting screen time recommendations and children's intellectual abilities and language development.

Discussion

Based on journal searches that have been conducted, several impacts of screen time on early childhood well-being were found. The negative impact of screen time on the physical dimension of early childhood well-being includes impaired motor development and reduced food intake (Litterbach et al., 2023), shorter sleep duration (Zhang et al., 2021; Manousaki et al., 2020; Rai et al., 2023; Veldman et al., 2023), poor child health development (Carballo-Fazanes et al., 2023; Kerai et al., 2022), lower outdoor physical activity (Neville et al., 2021; Vale & Mota, 2020; Rai et al., 2023; Chia et al., 2022), tend to be overweight (Hu et al., 2021), addiction and poor vision

(Chia et al., 2022). While only two studies state that there is no relationship between screen time and early childhood physical well-being, but support early health promotion that has an impact on early childhood physical well-being in the following year (Carballo-Fazanes et al., 2023; Kim et al., 2021). In addition, from the journal search above, there are still few studies that link the impact of screen time with diet and nutrition (physical well-being) in early childhood. The results of this systematic literature review derived from Scopus journals did not find a positive impact of screen time on early childhood physical well-being.

The negative impact of screen time on early childhood well-being in the social-emotional dimension include reduced social engagement with peers (Litterbach et al., 2023), lack of interaction between parents and children, access to inappropriate content (Chia et al., 2022), emotional symptoms (Tezol et al., 2022; Swider-Cios et al., 2023), behavioral problems (Li et al., 2020; Tezol et al., 2022; Neville et al., 2021; Liu et al., 2021), relationship problems with peers (Tezol et al., 2022), poor emotion regulation (Coyne et al., 2021; Paulus et al., 2021), poor temperament (Coyne et al., 2021), low emotion control (Fitzpatrick et al., 2022), thus resulting in poor psychosocial well-being (Tezol et al., 2022; McArthur et al., 2022), play disconnection and play disruption (Veziroglu-Celik et al., 2022). In addition, it impacts reducing social skills, adaptive skills, and early childhood life skills (McArthur et al., 2020). Meanwhile, this systematic literature review found no positive impact of screen time on early childhood well-being in the social-emotional dimension.

The negative impact of screen time on early childhood well-being in the cognitive dimension includes slow achievement of language skills according to early childhood language development milestones (Schwarzer et al., 2022; Zhang et al., 2022), reduced cognition and language (Schwarzer et al., 2022; Swider-Cios et al., 2023).

On the other hand, there are positive impacts of screen time on early childhood cognition, including increasing children's interest in reading and reading competence. The use of screen time does not replace time spent reading but replaces play time with peers (Putnick et al., 2022). This is reinforced by a systematic literature review on the impact of technology and screen time on early childhood learning by Kalati and Kim (2022), which revealed that 34 studies reported positive impacts, 17 studies had mixed results, and two articles reported negative impacts. Factors or conditions of touchscreens that affect early childhood learning were classified into five categories, namely application features/content, pedagogical approach applied, adult mediation, instructional grouping, and child age and experience/familiarity with touchscreens. Positive impacts on cognitive learning areas include literacy, math, science, and arts. Based on the systematic results of this literature review, it was found that screen time has a positive impact on early childhood writing literacy, precisely the concept of printing and writing names, letters, numbers, and capitalization, ebooks/digital books to help with word recognition, vocabulary comprehension, and reading skills. In math learning, the positive impact of screen time includes that touchscreen-based math skills (e.g., sorting numbers, comparing quantities, matching numbers to quantities) are more effective than traditional methods. However, some studies reported differences in response to math learning apps related to the child's age. In science learning, the positive impact of screen time is felt among children with special needs. In addition, in the field of art learning, screen time has a positive impact on drawing skills. So, it can be concluded that the positive impact of screen time on early childhood cognitive well-being is related to the field of cognitive learning (Kalati & Kim, 2022).

In addition, this systematic literature review has not found the impact of screen time on early childhood well-being in the spiritual dimension. So that it becomes an opportunity for further research. Based on the search, we only found literature (Ariff et al., 2022) that examines how technology is utilized for learning prayer in early childhood. This research establishes a procedure for developing educational mobile applications for early learners, who are receptive to new knowledge and information. As a proof of concept, the development of this application utilizes learning the recitation of prayers in Islam. The research results of Ariff et al. (2022) stated that users were satisfied with this application because most of the test scores were very high. Based on these results, this mobile application can be recommended for adoption by early learners.

The limitation of this systematic literature review is that it only describes and analyzes several Scopus articles from various countries that relate screen time to early childhood well-being. Thus, primary research is needed that directly examines the effect of screen time on early childhood well-being. The concept of the dimensions of early childhood well-being itself does not have a standardized concept, and each researcher has a different concept. So, this systematic literature review combines concepts from several researchers. In addition, there needs to be research that discusses screen time associated with early childhood well-being comprehensively. Therefore, it is an opportunity for future research.

Conclusion and Recommendation

Conclusion

Based on the results of the literature review, screen time has a direct and indirect impact on early childhood well-being. Overall, the negative impact of screen time on early childhood well-being is more in the physical and social-emotional dimensions. In the cognitive dimension, the impact is negative and positive. The negative impact on the cognitive dimension of early childhood well-being, among others, is slow to achieve early childhood language development according to early childhood development milestones. Meanwhile, the positive impact of screen time on the cognitive dimension of early childhood well-being includes an increased interest in reading, increased reading competence, media, and tools in exciting learning.

Recommendation

Policy recommendations include integrating education on screen time. Schools and other educational institutions should include education on wise and healthy screen use in the curriculum. This can help children understand the consequences of excessive screen use and the importance of balance with physical, social, and creative activities. In addition, there is a need to socialize parenting programs to parents about the positive and negative impacts of screen time on early childhood well-being.

Recommendations for further research, namely research on the impact of screen time on early childhood well-being in the spiritual dimension by involving risk factors and protective factors, have yet to be widely studied. So, it can be a novelty of research. In addition, policy recommendations and research on screen time and early childhood well-being should involve collaboration between the government, educational institutions, researchers, the technology industry, and parents. Ultimately, it can address

the challenges and opportunities of smart and responsible technology use among young children.

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