

Gadgets and Speech Delay in Early Childhood: A Literature Review

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Abstract: The purpose of this study is to find evidence and explain the influence of gadget use on speech delays in children. This study uses a literature review approach using selected sources based on specific research criteria or themes, namely journals published in the last 10 years. Source sorting was done by grouping according to keywords, where from the source sorting, 29 articles were found to be used as review sources, and 15 articles were found as primary sources that matched the keywords and 10 supporting articles as reference reinforcements, then 4 additional articles as comparisons. The results of the analysis indicate a link between excessive gadget use and speech delays in children. Parenting plays a significant role in shaping children's characteristics and development related to the use of electronic media or gadgets. In early childhood (ages 1-5 years), known as the golden age, during this period children experience rapid development in physical, motor, intellectual, emotional, language, and social aspects as they respond to their surroundings. During this period, children are highly responsive to given stimuli. Language development is a key indicator of a child's overall developmental progress, serving as a benchmark for cognitive abilities. Adequate physical activity can also improve motor skills and cognitive development. Therefore, active parental involvement in monitoring gadget use can reduce the risk of speech delays in children. In conclusion, speech delays can be prevented, among other things, by limiting children's gadget use and providing more play activities that stimulate and enhance gross motor development.

Keyword: Gadgets; Speech Delay

Introduction

Gadgets are a technological advancement widely used by all ages, including toddlers. According to research conducted in the United States (2018), one in three children can use a tablet, and 29% of toddlers can easily use gadgets. According to data from the Central Statistics Agency (BPS) (2022), the incidence of gadget use among children aged 0–4 years was 25.5%. Meanwhile, the incidence of internet access among children aged 0–4 years was 18.79%. Gadgets have become a popular pastime for children, and they tend to become dependent on them for their daily activities. Excessive use of gadgets can have a detrimental impact on children's development, particularly on speech. The National Center for Health Statistics, abbreviated as NCHS, reports that the incidence of speech delay in toddlers is 0.9%. Observations in the United States indicate that the quantity of speech delay in toddlers aged 4.5 years ranges from 5% to 8%, with an incidence of 2.3% to 19%. The National Institute on Deafness and Other Communication Disorders (2016) reports approximately 9%. Speech disorders are communication disorders that occur frequently in children aged 3-17 years. The NCHS reports that 70% of children at this age are unable to string words together effectively, while 30% are able to string words together effectively (Black, Vahratian, and Hoffman 2015). Speech delays in Indonesia in preschool children range from 5% to 10%, and the incidence of speech and language disorders ranges from 2.3% to 24% (Zamzani et al., 2022). Based on data from the Central Statistics Agency (BPS) in 2022, it was found that 25.5% of gadget use was in children aged 0-4 years. Meanwhile, 18.79% was internet access use in children in the same age group (Yulinawati et al., 2024). The increasingly widespread use of smartphones and internet access has become a contributing factor to speech delays in some children. This is inseparable from the rapid development of technology, especially in terms of the use of portable electronic devices or gadgets, which are now increasingly prevalent in society (Nuzulah & Thoriquussuud, 2024). Gadgets have become a form of entertainment for children, which can lead to dependence on them for daily activities. The impact of excessive duration or frequency of gadget use can affect children's development, one of which is speech disorders. The features or applications available on gadgets make children interested, even from teenagers to adults. Gadgets actually have positive and negative sides (Rahmayani, 2015; Sukmawati, 2019). Growth and development are ongoing processes that continue into adulthood. Speech delay is a condition where a toddler's speech process is delayed compared to other toddlers of the same age. The National Center for Health Statistics (NCHS) found that speech delays in toddlers reach 0.9%.

Observations in the United States indicate that the quantity of speech delays in toddlers aged 4.5 years ranges from 5% to 8%, with an incidence of 2.3% to 19%. The National Institute on Deafness and Other Communication Disorders in 2016 predicted that speech disorders are a common communication disorder in children aged 3-17 years. NCHS reported that 70% of children at that age are not yet able to put words

together well and also 30% of children are able to put words together well. Speech delays in Indonesia in particular have never been widely monitored, this is hampered in determining the criteria for delays in language development, however one study conducted by Safitri (2017) has predicted related to cases of speech delays, especially in toddlers in Indonesia, found to range from 5% to 10% with an average of 2.3% - 24%.

In early childhood development, speech and language development are crucial factors. Language is also a means of communication for expressing thoughts and feelings. A study by Suryawan and Meijanti (2021) found that gadgets are linked to speech delays in toddlers. This means that gadget use can contribute to increased speech delays in toddlers. Furthermore, other researchers have found that a lack of parental supervision while children are playing or using gadgets can increase the risk of children experiencing developmental delays in speech and language. The impact of prolonged gadget use can not only cause speech delays but can also affect children's physical health. For example, when children play with electronic devices or gadgets too often, it can lead to prolonged sitting and a preference for unhealthy fast food consumption. When this becomes a habit in children's lives, it will result in decreased activity levels, which can lead to depression in children. Several studies have shown that screen time, including excessive use of electronic devices, will result in decreased rest time.

Gross motor skills are the use of large muscles in the body to move the body. This is also influenced by the level of maturity of the child's body. In other words, a child's gross motor skills are closely related to the performance of large muscles in the child's body. This ability is used by children in sports activities, especially in performing various movements. Currently, the increasing use of electronic devices in early childhood can lead to less than optimal development of gross motor skills. Therefore, parental supervision and efforts to limit the use of gadgets in early childhood are very important. In the growth and development of early childhood 4-6 years, especially in the process of gross motor development, achievements that can be done are: running, climbing and descending stairs, kicking, jumping and throwing. The Indonesian Ministry of Health in Wiwik, (2022) reported that 0.4 million (16%) of Indonesian toddlers experience developmental disorders, both fine and gross motor development, hearing disorders, low intelligence and speech delays. Nowadays, the increasing use of electronic devices in early childhood can result in children's lack of development in their gross motor skills, therefore parental supervision and efforts to limit the use of gadgets in early childhood are very necessary. The importance of understanding and education to parents regarding child development and wise use of gadgets is very important, considering the lifestyle of today's society, on average every individual already has at least one gadget or even more, and gadgets have become items that cannot be separated from all daily activities, including parents, especially mothers, often in caring for or calming down children who are fussy or having a tantrum, one of

them is by providing gadgets as a medium that provides entertainment through applications. These parenting styles and habits can influence a child's growth and development, including gross motor skills, language skills, emotional intelligence, and social skills within their environment. Literature reviews reinforce and enrich previously researched knowledge and serve as references for gadget use and its impact, particularly on child development.

Method

This research is qualitative using a literature review, with library research techniques that involve reading and reviewing sources from journals, books, and various other published manuscripts related to the research topic to produce a written work with a specific theme (Marjali 2017). The keywords used to select articles are gadgets, speech delays, gross motor skills, and early childhood. The publication period selected for this article is the last 10 years, from 2015 to 2025. This article was searched using Google Scholar as a literature review using these keywords. Source sorting was done by grouping according to keywords, where from the source sorting, 29 articles were found to be used as review sources, and 15 articles were found as primary sources that matched the keywords and 10 supporting articles as reference reinforcements, then 4 additional articles as comparisons.

Results and Discussion

Language skills are an indicator of a child's overall cognitive development, which will be related to their future education and will also significantly impact their social life. Language disabilities can often result in children feeling alone, unable or having difficulty expressing their desires, and often experiencing misunderstandings when interpreting the language they use. Developmental problems in children's language skills are common, particularly speech delays. Studies in several countries indicate that speech delays occur in an average of 6-8 percent of preschool children (Wahyuni et al., 2024). One of the factors contributing to speech delay is a lack of references when a child uses the right words when speaking, in addition to a lack of motivation to speak, and a lack of opportunities to speak (Istiqlal, 2021). The most common form of communication disorder is speech delay. Some triggering factors include low maternal education, male gender, and a family history of similar disorders. These three factors have a 7.71 times greater chance of experiencing speech delay compared to other children without these factors (Campbell et al., 2003).

Children as passive listeners are also one of the causes of delayed mastery of speaking, one of the things that makes children become passive listeners is the excessive use of gadgets at an early age without parental supervision, this happens because gadgets only make children communicate one way, namely only responding to what is seen. Here the child's role is only as a recipient of information without

digesting and processing the information received (Umah, 2017). Parental knowledge and parenting patterns are also very important, especially regarding the use of gadgets in children, considering that children aged 3-6 years enter the golden age where this period is a very sensitive and determining development in the future for children (Sofiyah et al., 2024). This statement is reinforced by (Yulinawati et al., 2024) where the lack of parental attention to children in using gadgets can have an impact on speech delays and children will experience language disorders, in the future this will also have an impact on academic development, emotional well-being and social life of children.

Many parents often use gadgets to calm their children, which can lead to children becoming dependent on them. Consequently, children rarely communicate verbally, so gadgets are used as a sedative, leading to their dependence on gadgets. Research (Wati, 2021) found that using a gadget for 30 minutes per day, or twice a day, falls into the low-intensity category; using it for 40-60 minutes per day, or 2-3 times a day, is considered moderate; and using it for 120 minutes per day, or more than 75 minutes per day, is considered high-intensity. Using a gadget for more than 30-75 minutes per day falls into the category of gadget addiction.

It can be concluded that the intensity of children's long-term use of gadgets can pose a significant risk of speech delay. Another contributing factor is the lack of effective interaction and stimulation provided by parents, which results in limited interaction and vocabulary development in children (Nuzulah & Thoriqussuud, 2024). Supported by (Bawono, 2017), the results of their research state that the causes of speech delays in children include a lack of motivation, limited opportunities to speak, and the presence of foreign languages heard, and the inability of parents to stimulate children to speak. According to (Pebriana, 2017), gadgets are one of the things that can hinder the development of children's psychomotor abilities, where when children should be able to explore their physical abilities in play activities, children are busy with gadgets. In addition, the strained social relationship between parents and children is triggered by busyness with their gadgets.

Based on several studies that have been conducted, if a child is found to show signs of speech delay, parents need to be alert and immediately follow up by conducting a more comprehensive detection and examination by experts so that the child's development remains in accordance with their developmental age. Well-trained and developed gross motor skills bring many benefits, one of which is the ability to master movements considered difficult. This skill can improve physical abilities, to reduce fatigue during physical activity (Frith & Loprinzi, 2019), both in short and long-term training. Mastery of gross motor skills is very important for early childhood for future achievements (Dini, 2022). Similar to research conducted by Saripudin (2019), he analyzed children's growth and development from a gross motor perspective. The study found that motor changes can be observed in body size, body proportions, and changes in physical characteristics before and after, which are indicators of organ

maturity. This is reinforced by Holloway's opinion that children's gross motor skills play a crucial role in the growth and development of children's social relationships, especially in children with special needs or autism (Holloway et al., 2018). Childhood is the best time to teach and train children's basic motor skills. According to Rahman et al., 2020, mastering basic gross motor skills from an early age will greatly assist children in becoming skilled individuals in their future lives.

The golden age is the peak of development in children, one of which is the development of speech and language, where during this developmental period children will be very active in playing, imitating behavior, babbling, imitating sounds, and combining words into sentences, this is reinforced by (Sukmawati, 2019), the developmental age of 1-5 years is a crucial period in child growth and development to determine subsequent development. Children at this age are more quickly receptive to the stimulus given (Dini, 2022), during the window of opportunity (the first 5 years) where the period can be optimized to stimulate various cognitive, physical, talent and interest, spiritual, language as well as social and economic development abilities (Antina & Qomari, 2022). Language development is one indicator of the overall development of the achievement of children's cognitive abilities related to children who have gone to school later. In social life, it will also be very influential, children will always feel alone without being able to express what they want, and always not understood By others if they want something with inappropriate language.

Conclusion

One of the impacts of excessive gadget use in early childhood can result in delays in language acquisition and can make children passive listeners. The role of gadgets here provides maximum stimulation, thus disrupting the development of children's brain cells, especially those involved in language and speech. Furthermore, excessive gadget use in early childhood without parental supervision can increase the risk of speech delays in children. Thus, the longer a child uses gadgets, the greater the risk of children experiencing speech delays. One crucial role in shaping the character and abilities of individual children in social relationships, both in language and communication skills, is very significant for their development as skilled individuals in the future by developing gross motor skills in children.

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