



## **Pengaruh Penggunaan Smartphone Terhadap Perkembangan Bahasa Balita Di Wilayah Kerja Puskesmas Karang Tengah Kota Tangerang**

### ***The Influence Of Smartphone Use On Toddlers' Language Development At Puskesmas Karang Tengah Tangerang City***

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Received:23 Juni 2025; Revised:30 Juni 2025; Accepted:07 Juli 2025

#### ***Abstract***

The phenomenon of smartphone use among children has drawn attention to toddler development. This stage, which spans from 12 to 59 months, is often referred to as the "golden age" for human development. During this period, children are particularly receptive to various forms of growth, including intelligence, aptitude, physical abilities, cognitive skills, language development, social-emotional skills, and spiritual capacities. This study aims to determine the relationship between smartphone use and language development in toddlers in the working area of Karang Tengah Community Health Center, Tangerang City. This research was a quantitative study using a cross-sectional design. The study's population comprised 105 toddlers selected using a non-probability purposive sampling technique. Data analysis included univariate analysis and bivariate analysis, using the Fisher's Exact Test. The findings reveal a p-value of 1.000 ( $\alpha < 0.05$ ), suggesting that there is no significant relationship between the level of smartphone use and language development in toddlers in the working area of Karang Tengah Community Health Center. There is no significant relationship between smartphone use and language development in toddler. For future studies, it is essential to conduct a more in-depth exploration of parenting dynamics, parental communication patterns, and the socio-economic context of families..

**Keywords:** Smartphone use, Language development

#### **Abstrak**

Fenomena penggunaan *smartphone* pada anak ini telah menjadi fokus perhatian terhadap perkembangan balita. Perkembangan anak usia balita (12 – 59 bulan) merupakan fase penting yang disebut dengan sebagai *golden age* atau masa keemasan manusia. Periode ini merupakan

periode kondusif untuk pengembangan berbagai keterampilan, termasuk kecerdasan, bakat, fisik, kognitif, linguistik, sosial emosional, dan kapasitas spiritual. Penelitian ini bertujuan untuk mengetahui hubungan penggunaan smartphone dengan perkembangan bahasa pada balita di wilayah Puskesmas Karang Tengah Kota Tangerang. Jenis penelitian ini merupakan penelitian kuantitatif. Penelitian ini menggunakan rancangan cross-sectional. Populasi dalam penelitian ini adalah balita, sebanyak 105 responden dengan menggunakan teknik *nonprobability purposive sampling*. Analisa data yang digunakan adalah analisa univariat dan analisa bivariat dengan menggunakan uji korelasi Fisher Exact Test. Hasil pengolahan data menunjukkan hubungan penggunaan smartphone dengan perkembangan bahasa balita menunjukkan nilai p value 1,000 ( $\alpha > 0,05$ ) yang berarti tidak ada hubungan yang signifikan antara tingkat penggunaan smartphone dengan perkembangan bahasa pada balita di wilayah kerja Puskesmas Karang Tengah Kota Tangerang. Berdasarkan hasil tidak terdapat hubungan yang signifikan antara penggunaan smartphone dengan perkembangan bahasa pada anak. Penelitian selanjutnya diharapkan lebih mengeksplorasi faktor pola asuh, komunikasi orang tua dan faktor sosial ekonomi keluarga.

**Kata Kunci :** Penggunaan *smartphone*, Perkembangan bahasa

**DOI :** 10.15408/jrph.v7i1.48043

## Introduction

In this digital era, using smartphones has become an integral part of daily life, involving a variety of activities such as communication, productivity, conducting transactions, accessing information, and entertainment. According to data from 2018 provided by eMarketer's digital marketing research. Indonesia ranks fourth in the world for active smartphone users, following China, India, and the United States. Out of Indonesia's approximately 250 million population, over 100 million people use smartphones (1).

Smartphones are widely used among various groups, including parents of toddlers. According to a survey conducted by Common Sense Media in America in 2017, out of 1,400 parents, nearly 98% reported that their children aged 0-8 years are at home with mobile devices. Among these, 95% are smartphones, which marks an increase from 63% in 2011 (2).

Based on national Riskesdas report data in 2018, the proportion index and type development of children aged 36-59 months in Banten Province is more lower than DKI Jakarta and West Java, namely by 81.9% with presentation literacy numerical 59.2%, ability physical 95%, ability social emotional 66.8%, and ability Study by 95% with amount population toddler aged 0-4 years in Banten Province in 2022 was recorded as many as 1,042,954 million souls.

According to a study titled "Preschoolers' Screen Time and Reduced Opportunities for Quality Interaction: Associations with Language Development and Parent-Child Closeness in the South Island of New Zealand," involving 84 parents with preschool-aged children, it was found that children who spend more time in front of screens—whether watching TV or playing on smartphones—exhibit lower levels of language production and understanding (12).

Additionally, a study identified a connection between the intensity of gadget use and language development in toddlers. This research was carried out in Integrated PAUD Mokusato, involving 43 respondents, of whom 16 participated in a more focused analysis. Out

of these, 8 children were found to experience delays in language and speech development.(22)

In 2023, the percentage of young children using mobile phones or wireless devices in Banten Province is 26.86%, which is still lower than the national average of 38.92%. Although this percentage is below the national average, it is important to note that recommendations suggest toddlers should not have access to gadgets at all, as doing so can negatively impact their development (24). Smartphone use negatively impacts on health, culture, language, and social interactions in children. It can lead to speech delays, social isolation, and a decreased interest in engaging with their environment. Children may struggle to express their desires appropriately, hindering their language and artistic skills. Furthermore, excessive smartphone use can affect their ability to make eye contact and may result in illogical art. Overall, it limits various aspects of children's development (23).

This study aims to investigate the intricate relationship between smartphone usage and language development in toddlers residing in the Karang Tengah Health Center area of Tangerang City. With a growing concern about the potential impact of excessive smartphone exposure on young children's linguistic abilities, this research seeks to understand how these digital devices may contribute to language delays in early childhood. By emphasizing the significance of mindful and appropriate smartphone use, the study advocates for strategies that can promote healthy language development and mitigate potential risks associated with screen time in toddlers.

## Methods

The research is a cross-sectional study. This study was conducted in accordance with the principles outlined in the Declaration of Helsinki. Ethical approval was obtained from Lembaga Penelitian dan Pengabdian Masyarakat Universitas Yatsi Madani, with approval number 012/LPPM-UYM/III/2024. The study population consists of toddlers who meet the inclusion criteria at the Karang Tengah Health Center in Tangerang City. Specifically, the participants are toddlers who have been using smartphones for at least six months. The sample was selected using a non-probability purposive sampling technique, focusing on toddlers aged 36 to 59 months, with a total of 105 children included in the study. The research utilized the *Smartphone Addiction Scale (SAS)* questionnaire, which was developed from the journal 'Development and Validation of a Smartphone Addiction Scale,' along with the Denver II instrument to assess developmental levels.

## Results

**Table 1**Frequency Distribution of Respondents Characteristics Based in in the Work Area of Karang Tengah Community Health Center , Tangerang City

No	Characteristics	Frequency	Percentage %
<b>Age</b>			
1.	36-38 months	39	37.1%
2.	39-41 months	9	8.6%
3.	42-44 months	8	7.6%
4.	45-47 months	3	2.9%
5.	48-50 months	4	3.8%
6.	51-53 months	20	19.0%
7.	54-56 months	13	12.4%
8.	57-59 months	9	8.6%
<b>Gender</b>			
1.	Male	49	46.7%
2	Female	56	53.3%
<b>Smartphone Usage History</b>			
1.	Since 6 months ago	19	18.1%
2.	Since 1 year ago	86	81.9%

Table 1 presents the frequency distribution characteristics of respondents based on age. Among the 105 total respondents, the largest group consists of toddlers aged 36-38 months, which includes 39 respondents (37.1%). Additionally, there are 20 respondents (19.0%) in the age group of 51-53 months. The table also categorizes respondents by sex, revealing that there are 56 females (53.3%) and 49 males (46.7%). Furthermore, regarding smartphone usage history, 86 respondents (81.9%) reported having used a smartphone for one year, while 19 respondents (18.1%) indicated they have been using a smartphone for only six months.

**Table 2.** Frequency Distribution of Respondents in Smartphone Usage

No.	Usage Level	Frequency	Percentage (%)
1.	Low	6	8.6%
2.	High	99	91.4%
Total		105	100%

Table 2 presents the frequency distribution of respondents based on their level of smartphone usage. It shows that the majority of toddlers in the workplace at Karang Tengah Health Center fall into the high usage category, with 99 respondents (91.4%). In contrast, only 6 respondents (8.6%) fall into the low usage category.

**Table 3.** Frequency Distribution of Respondents in Language Development

No.	Language Development Levels	Frequency	Percentage (%)
1.	Normal	96	91.4%
2.	Abnormal	9	8.6%
Total		105	100%

Table 3 presents the distribution frequency of respondents categorized by language development levels in toddlers. The findings from the Karang Tengah Health Center reveal that most toddlers fall within the normal development range, with 96 respondents (91.4%) classified as having normal language development. In contrast, 9 respondents (8.6%) were identified as having abnormal language development.

**Table 4. Relationship Use of Smartphone with Language Development in Toddlers in the Work Area Karang Tengah Community Health Center , Tangerang City**

Table 4 shows that in 105 toddlers with level use high *smartphone* own development abnormal language as many as 9 respondents ( 9.1 %) and development Language normal category as many as 90 respondents (90.9%). While in toddlers with level use low *smartphone* with development normal language of 6 respondents (100%) and development Language abnormal as many as 0 respondents ( 0%). The results of the *Fisher's Exact Test* on the variables use *smartphone* obtained *p value* = 1,000 ( $p > 0.05$ ).

Smartphone Usage	Language Development				Total		P <i>value</i>
	Normal		Abnormal				
	N	%	N	%	N	%	
Low	6	100	0	0	4	100	1,000
Tall	90	90.9	9	9.1	90	100	
Total	96	91.4	9	8.6	94	100	

## Discussion

Research shows that most respondents are between 36-38 months old, comprising 39 out of 105 respondents (37.1%). This age grouping was based on age-adjusted Denver II assessments, which evaluate language development. A study in Sedayu, Bantul found a significant relationship between developmental stimulation and the growth of children aged 12-36 months. Additionally, a review of 16 journals suggests that appropriate smartphone use by young children can effectively enhance their development. (3) .

Gender refers to the differences between Male and Female, primarily in a biological context, based on how someone is born (21). The majority gender type in this research is Female, comprising 56 out of 105 respondents (53.3%). This is consistent with a study conducted by Agustina and Hermansyah, where the majority of respondents were female, making up 52% of the sample (4).

Female have a higher average smartphone addiction value of 82.25% compared to male, who have an average of 77.92%. Several factors influence child development, one of which is gender (20). Girls tend to grow and achieve maturity more quickly than boys. Additionally, girls generally experience faster motor development, which allows them to use smartphones at an earlier age.

Smartphone usage history refers to the duration of smartphone use. is range time beginning Already its use smartphone . Research shows that 86 respondents (81.9%) have started using

smartphones in the past year. One in three children start using smartphones at 3 years old, and one in ten children use smartphones at younger ages, such as 2 years old enjoy *smartphone* in older age young that is 2 years (11). A survey by *Common Sense Media* in Philadelphia, United States as many as 70% of 350 parents allow children they play *smartphone* now do work House stairs and 65% said do matter the For calm child moment be in place general (2).

In smartphone usage , respondents were categorized into two groups: low and high usage level This is dominated by respondents with level use high *smartphone* as many as 99 respondents (91.4%). A study indicates that when children are given smartphones or engage in activities on them, they tend to feel comfortable, calm, and happy. This also allows parents to feel at ease, as their children are settled and not bothering them during their own activities. Because children feel comfortable while using smartphones, their usage levels tend to be quite high (21).

In development language , there are 2 categorie namely normal and abnormal In the study this , development Language toddlers in the work area Karang Tengah Health Center is dominated by the normal category with 96 respondents (91.4%). Development Language related with development cognitive, which means factor intelligence is very influential to development ability speaking. The more big child grow and develop , ability the language start develop from very simple level towards the complex (13).

Based on the results finding, among respondents with high smartphone usage, 90 respondents (90.9%) displayed normal language development, while 9 respondents (9.1%) showed abnormal language development. The p-value was 1.000 ( $\alpha > 0.05$ ), indicating that there is no significant relationship between smartphone usage levels and language development in toddlers at the Karang Tengah Community Health Center in Tangerang City.

Recent research conducted by various researchers found that smartphone overload does not significantly influence language development in toddlers. Many toddlers use smartphones every day, both at home and outside. They typically use smartphones to watch animated cartoons on YouTube, view videos on TikTok, or play online games(6).

According to Piaget, language development stems from the close relationship between a child and their environment, complemented by interactions that enhance cognitive and developmental capacities(15). If parents provide good supervision while their child uses a smartphone, it is possible to avoid problems with language development.

Additionally, there is another theory of language acquisition known as the nativist viewpoint, which suggests a close connection between biological factors and language development. Nativist theory posits that the ability to use language is an inherent skill that one is born with (8).

The research findings are consistent with the study conducted by Baiti, that shows from 173 respondents obtained results there is significant relationship between pattern foster care and communication parent to ability Language child age early that is as many as 48% of parents apply pattern foster democratic and 52.6% of communication is done by parents with child said to be very good with 31.8% of children can develop skills speak in accordance with hope(8) . Children have type pattern communication with parents in activity different everyday, with different parents ' busyness, which influences intensity communication, exchange story or experience and express idea .

According to research, social status and family economics can significantly support a

child's development. This information can serve as guidance for parents, helping them understand the importance of giving attention to their children. It is particularly beneficial for parents from middle-class backgrounds to foster the growth of their children effectively. intermediate to the top and also class intermediate down .

In a study conducted at the Village Health Clinic in Banyuanyar, Sampang District, among 30 respondents, it was found that 43.3% of parents with prosperous economic status showed a correlation between economic stability and children's language development (9).

Additionally, parenting styles have an impact on children's language development. A research examined the connection between parenting styles and language development in preschool-aged children (4-5 years old) at An Nidhom Kindergarten in Bangsongan Village, Kediri Regency (14). The findings revealed a clear relationship between parenting styles and language development in these children. The study findings from 38 respondents obtained by 50% of parents with pattern democratic parenting and as many as 50% of children own development normal language. Parents who adopt a democratic parenting style value their child's individuality while also emphasizing the limitations of social norms. In this approach, the parent actively invites the child to engage in conversation, encouraging them to practice their thoughts and ideas. This encourages the child to develop problem-solving skills when faced with challenges. By using this fostering pattern, which parents may not even realize they are employing, they provide significant stimulation for the child's development, particularly in terms of language skills.

According to research conducted in 2020 at the Kunciran Health Center in Tangerang City, data was collected from 49 female respondents, of whom a majority 44 individuals (89.9%) had normal language development. Among 26 male respondents, 17 individuals (65.4%) also exhibited normal language development. The analysis revealed a p-value of 0.014, which is less than 0.05. This indicates a significant connection between sex and language development in young children. at Kunciran Health Center Community Health Center in Tangerang City in 2020(10).

## **Conclusion**

The use of smartphones and its impact on language development in toddlers at the Karang Tengah Community Health Center in Tangerang City shows no significant influence, as indicated by a p-value of 1.000 ( $\alpha < 0.05$ ). In the next study, we suggest conducting a comprehensive examination of parental care patterns and communication, along with the significant impact of socioeconomic factors. This comprehensive approach will provide valuable insights that can significantly enhance our understanding of these vital relationships.

## **Acknowledgment**

The author wishes to acknowledge the various parties for their support and contributions in preparing this manuscript for publication.

## **Conflict of Interest**

No potential conflicts of interest were reported by the authors.

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