E-ISSN: 2987-209X
International Journal of Midwifery and Health Sciences
Vol. 3, Issue 1 (2025), March

The Relationship Between Parental Knowledge Levels and the Intensity of Giving Gadgets to Preschool-Aged Children.

Prestasianita Putri[1*], Alfid Tri Afandi[2], Indah Yunita Lestari[3]

[1]Faculty of Health Sciences, Dr. Soebandi Jember*
[2]Faculty of Nursing, Jember University
[3]Hospital Nurse Practitioner
** Corresponding Author: Prestasianita Putri, email: prestasi.nursing@uds.ac.id*

Submission date: 24-03-2025; Date of received: 28-03-2025

Abstract

The increasing use of gadgets among preschool-aged children has become a growing concern for parents and educators. This study examines the relationship between parental knowledge levels and the intensity of gadget usage given to preschool-aged children. A cross-sectional design was employed, involving 52 parents of preschool-aged children selected through purposive sampling in an urban community. Data were collected using structured questionnaires that assessed parental knowledge levels regarding gadget usage and the frequency with which gadgets were provided to their children. Parental knowledge was categorized as either "adequate" or "inadequate," while gadget usage intensity was measured based on daily screen time reported by the parents. Statistical analysis was performed using Spearman's rank correlation test to determine the association between the two variables. The results revealed a significant relationship between parental knowledge levels and the intensity of gadget usage ($p = 0.017$). Parents with inadequate knowledge were more likely to allow higher gadget usage among their children compared to those with adequate knowledge. These findings suggest that enhancing parental awareness and understanding of the potential risks associated with excessive gadget exposure is crucial in promoting healthier developmental environments for preschool-aged children. Future interventions should focus on educating parents about appropriate gadget use and alternative activities to minimize screen time and support optimal child development.

Keywords: parental knowledge, gadget usage, preschool children

Introduction

The development of information and communication technology has brought significant changes to human life, including parenting patterns. One increasingly widespread phenomenon is the use of gadgets by preschool-age children (2-5 years). Gadgets such as smartphones and tablets are practical tools to calm children, entertain them, or even serve as alternative learning media [1]. However, excessive use of gadgets

at an early age can hurt children's physical, cognitive, emotional, and social development [2].

According to the American Academy of Pediatrics (AAP), screen time in preschool children should be limited to one hour per day with high-quality content [3]. However, facts on the ground show that many preschool-age children spend more than this limit playing games, watching videos, or exploring applications on gadgets [4]. This is often caused by parents' lack of understanding about the impact of gadgets on children's development. Several studies report that parents tend to give gadgets to children as an easy way to divert attention or reduce stress in certain situations [5].

The level of parental knowledge plays an important role in determining the intensity of giving gadgets to children. Adequate knowledge about the benefits and risks of using gadgets can help parents make wiser decisions in managing children's screen time [6]. On the other hand, ignorance or misunderstanding about gadgets can lead to bad habits that can potentially be detrimental to children's development [7]. For example, some parents may not realize that excessive screen exposure can interfere with a child's ability to focus, communicate effectively, or even sleep well [8].

Previous research has shown a relationship between the level of parental knowledge and parenting behavior related to gadgets. A study by Smith et al. (2020) found that parents with low knowledge tend to give gadgets to their children more often than parents with high knowledge [9]. Similar findings were also reported by Lee and Park (2021), who showed that educating parents can increase their awareness about the healthier use of gadgets for children [10]. However, there is still little research that specifically examines this relationship in preschool children, especially in Indonesia.

In Indonesia, the trend of young children using gadgets is increasing as internet access becomes easier and more affordable. A survey conducted by the Ministry of Communication and Information (Kominfo) in 2022 shows that more than 60% of preschool children already have regular access to gadgets [11]. This phenomenon raises concerns because many parents do not fully understand the long-term consequences of exposure to gadgets in children, including prolonged fatigue.[12]. In this context, it is important to dig deeper into how parents' level of knowledge influences their decisions in giving gadgets to their children.

This study aims to identify the relationship between the level of parental knowledge and the intensity of giving gadgets to preschool children. It is hoped that the results of this research will provide new insights for parents, educators, and policymakers

about the importance of education regarding the use of gadgets in early childhood. Apart from that, these findings can also be used as a basis for designing intervention programs aimed at increasing parental awareness and reducing the risk of negative impacts of gadgets on children's development.

Method

This research was designed to examine the relationship between parents' level of knowledge and the intensity of giving gadgets to preschool children. This research uses a quantitative approach by *cross-sectional design*, which aims to describe the relationship of variables simultaneously at a certain time. This methodology was chosen because it is efficient and able to provide a direct picture of the relationship between two variables, namely the level of knowledge of parents as an independent variable and the intensity of giving gadgets to children as a dependent variable [13].

The population in this study were parents who had preschool-aged children (2-5 years) in an urban area in one of the sub-districts. Urban areas were chosen because access to gadgets tends to be higher than in rural areas [14]. The sampling technique uses a purposive sampling method, namely selecting respondents based on certain inclusion criteria. Inclusion criteria include: (1) parents who have children aged 2-5 years, (2) the child regularly uses gadgets at least once a day, and (3) parents who are willing to fill out the questionnaire completely. The number of samples was determined based on the minimum sample size formula for the Spearman statistical test, namely 52 respondents.

The main instrument in this research is a questionnaire, which consists of two parts. The first section contains demographic questions, such as parental age, gender, education level, occupation, and number of children. The second part consists of two measurement scales. The first scale is used to measure parents' level of knowledge about gadgets. This scale includes 20 statement items with answers of "True," "False," or "Don't Know." The correct answer was given a score of 1, while the wrong answer or don't know was given a score of 0. The total score was then categorized into two groups: "High Knowledge" (score ≥ 70%) and "Low Knowledge" (score < 70%) [15].

The second scale measures the intensity of giving gadgets to children. This instrument was adapted from a questionnaire developed by Nikken and Jansz (2014), which includes the frequency and duration of gadget use by children [7]. Respondents were asked to report how many hours, on average, their children used gadgets per day, as well as how many times they were given gadgets per week. This data was then categorized

into three groups: "Low" (<1 hour/day), "Medium" (1-2 hours/day), and "High" (>2 hours/day).

Data was collected through an online survey using the Google Forms platform. The survey was distributed via social media, parent community WhatsApp groups, and online discussion forums. Before filling out the questionnaire, respondents were provided with brief information about the purpose of the study and confirmation of consent to participate. The data collection process was carried out over a period of one month to ensure adequate representation of the target population. The data that has been collected is analyzed using the SPSS statistical application. Descriptive analysis was used to describe the characteristics of respondents, the level of parental knowledge, and the intensity of giving gadgets. Inferential analysis was carried out using Spearman's rho statistical test to assess the relationship between the level of parental knowledge and the intensity of giving gadgets. This test was chosen because the data on the level of knowledge and intensity of giving gadgets are ordinal. The level of statistical significance was set at $\alpha = 0.05$.

Results

Respondent Demographic Data

Table 1 Distribution of respondent demographic data (n=52)

No	General Data	Number (n)	Percentage (%)
1	**Age Range:**		
	< 21 Years	11	21.2
	21 - 35 Years	18	34.6
	> 35 Years	23	44.2
2	**Education**		
	Elementary/Junior School	19	36.5
	Senior High School	29	55.8
	College	4	7.7
3	**Work**		
	Not Working/Housewife	26	50
	Self-employed	16	30.8
	Private	7	13.4
	State Civil Apparatus	3	5.8
	Total	52	100

Table 1 provides a demographic description of the respondents in the study, which shows that the majority of respondents were over 35 years old (44.2%), had a high

school education (55.8%), and half of them did not work or acted as housewives (50%), with self-employment being the second largest occupational category (30.8%). Overall, the respondent population tends to be dominated by older adults with middle to lower educational backgrounds, and many are not active in the formal world of work, which can influence research variables such as the level of parental knowledge and the intensity of giving gadgets to preschool-aged children.

Research Variable Data

Table 2 Distribution of Respondents' level of knowledge

No	Knowledge Level	Frequency	Percentage (%)
1	Good	26	50,0
2	Enough	18	34,6
3	Not enough	8	15,4
	Amount	52	100%

Table 2 describes the level of knowledge of respondents regarding the research topic, which is divided into three categories: good, sufficient, and poor. A total of 26 respondents (50.0%) had a good level of knowledge, while 18 respondents (34.6%) were in the sufficient category, and 8 respondents (15.4%) were in the poor category. Overall, most respondents (84.6%) had good to fair knowledge, with only a small portion indicating poor knowledge. This shows that most respondents have an adequate understanding of the material studied, although there are still minority groups who need to increase their knowledge.

Table 3 Distribution of Gadget-Giving Intensity

No	Intensity of Giving *Gadget*	Frequency	Percentage (%)
1	High	16	30,8
2	Currently	22	42,3
3	Low	14	26,9
	Amount	52	100%

Table 3 describes the intensity of giving gadgets to preschool children by respondents, which is divided into three categories: high, medium, and low. A total of 16 respondents (30.8%) gave gadgets with high intensity, 22 respondents (42.3%) did so with medium intensity, and 14 respondents (26.9%) gave gadgets with low intensity. Overall, most respondents tend to give gadgets with medium intensity, followed by high and low intensity. This shows that although almost a third of respondents give gadgets

intensively, more than half are still in the moderate category regarding the frequency of giving gadgets to children.

Table 4 Cross Tabulation of Knowledge Level with Gadget Giving Intensity

Knowledge Level	Intensity of Giving *Gadget*			Total
	High	Currently	Low	
Good	6 11,5%	9 17,3%	11 21,2%	26 50,0%
Enough	6 11,5%	9 17,3%	3 5,8%	18 34,6%
Not enough	4 7,7%	4 7,7%	0 0%	8 15,4%
Total	16 30,8%	22 42,3%	14 26,9%	52 100%

In Table 4, the cross-tabulation data illustrates the relationship between the respondent's level of knowledge and the intensity of giving gadgets to children. From this data, it can be seen that respondents with a good level of knowledge tend to give gadgets equally in all intensity categories: 6 respondents (11.5%) in the high category, nine respondents (17.3%) in the medium category, and 11 respondents (21.2%) in the low category. This shows that even though they have good knowledge, some of them still provide gadgets with high intensity.

Respondents with a sufficient level of knowledge also showed a similar pattern, with a relatively even distribution: 6 respondents (11.5%) in the high category, nine respondents (17.3%) in the medium category, but only 3 respondents (5.8%) in the low category. This shows that sufficient knowledge does not always correlate with reducing the intensity of giving gadgets. Meanwhile, respondents with more or less knowledge levels gave gadgets with high intensity (4 respondents or 7.7%) and medium (4 respondents or 7.7%), and none gave gadgets with low intensity (0%). This shows that the lower the level of knowledge, the greater the tendency to provide gadgets with higher intensity.

Overall, these data show a tendency for a better level of knowledge to be associated with a more even distribution of intensity of gadget giving, while less knowledge tends to be correlated with more intense gadget giving. However, this pattern is not absolute because even respondents with good knowledge still give gadgets at a high intensity.

Discussion

The research results show a relationship between the level of parental knowledge and the intensity of giving gadgets to preschool children. Cross-tabulation data revealed that the majority of respondents with a good level of knowledge (50.0%) had a relatively even distribution in the gadget-giving intensity category, namely high (11.5%), medium (17.3%), and low (21.2%). Meanwhile, in the group with less knowledge (15.4%), there was a greater tendency to give gadgets with high intensity (7.7%) compared to low intensity (0%). These findings show that although parental knowledge influences decision-making about gadgets, other factors such as the social environment, family habits, or situational pressure influence this behavior [16].

Overall, the results of the Spearman statistical test show a significance value of $p = 0.017$, which shows a significant relationship between the level of parental knowledge and the intensity of giving gadgets. This is in line with the results of previous research, which states that parental knowledge plays an important role in regulating children's screen exposure [17]. However, the data distribution pattern in this study also shows that knowledge alone is not enough to completely change gadget-giving behavior, so additional interventions such as practical education or community support are needed.

According to the *Health Belief Model* (HBM), a person's decision to adopt healthy behavior is influenced by their perception of the risks and benefits of an action [18]. In children's use of gadgets, well-informed parents may better understand the negative impacts of excessive screen exposure, such as impaired language development, sleep problems, and potential digital addiction [19]. However, this theory also highlights that factors such as logistical barriers (e.g., busy parents) or external pressures (e.g., social norms) can weaken the intention to reduce gadget giving [20].

Apart from that, s*ocial cognitive theory* (SCT) explains that individual behavior is influenced by the interaction between personal factors (knowledge), environment (social norms), and behavior itself [21]. In this study, even though parents had good knowledge, some still gave them gadgets intensively because they might face environmental pressures, such as the need to calm their children when working or carrying out household activities. This shows that knowledge alone is not enough to change behavior without the support of a supportive environment.

Although this research shows a significant relationship between the level of knowledge and the intensity of giving gadgets, the results also show that many parents still give gadgets intensively even though they have good knowledge. In the author's

opinion, this phenomenon reflects modern challenges in parenting, where gadgets are often considered an instant solution to entertain or distract children [22]. Therefore, the educational approach to parents must not only focus on increasing knowledge but also provide practical alternatives to reduce dependence on gadgets.

For example, educational programs may include training on how to use the method of *positive parenting* to manage children's behavior without relying on gadgets [23]. Apart from that, parents can be invited to get to know alternative activities such as reading books together, playing traditional games, or doing physical activities that involve direct interaction with children [24][25]. In this way, parents not only know the negative impacts of gadgets but also have practical tools to implement healthier parenting behaviors.

These findings have important implications for stakeholders, including governments, educational institutions, and community organizations. First, the results of this research can be used as a basis for designing more holistic educational programs for parents, especially those with preschool-aged children. Second, these results also show the need for public campaigns that emphasize the importance of limiting screen time for children, as well as providing practical guidance for parents to manage gadgets wisely [26][27].

However, this study also has several limitations that need to be considered. C*ross-sectional* design only allows for identifying relationships at one particular time, so it cannot show cause-and-effect relationships. In addition, the data used is self-reported, which is susceptible to recall bias or a tendency to give answers that are considered more socially positive [28][29]. Therefore, further research with a longitudinal design and more objective data collection instruments is needed to strengthen these findings.

Limitation

This research has several limitations that need to be considered, including the design, which only measures variables at one particular time, so it cannot assess cause-and-effect relationships, uses self-report data (*self-reported*), which is susceptible to recall bias or social predisposition, as well as limited sample representation to an urban population with a relatively small sample size so the results may not be generalizable to a wider population. In addition, the instruments measuring the level of knowledge and intensity of gadget exposure have not been formally validated in this research and focus only on preschool-aged children without considering the long-term impact of gadget exposure on

children's development. To strengthen the findings, further research with longitudinal designs, larger samples, and more objective measurements is needed

Conclusion

This research shows that the level of parental knowledge is correlated with the intensity of giving gadgets to preschool children. However, knowledge alone is not enough to completely change gadget-giving behavior because other factors, such as situational pressure and social norms, also play a role. Based on these findings, it is recommended that educational programs focus not only on increasing knowledge but also on providing practical alternatives to reduce dependence on gadgets. With a more holistic approach, it is hoped that parents can make wiser decisions in regulating their children's use of gadgets.

Ethical Considerations

In this study, there were no ethical conflicts of interest

Acknowledgment

We would like to thank the respondents who agreed to participate in this research.

Conflict of Interest

In this study, there was no conflict of interest

References

1. Rideout VJ, Robb MB. The Common Sense Census: Media Use by Kids Age Zero to Eight. Common Sense Media; 2020. Available from: https://www.commonsensemedia.org/sites/default/files/uploads/research/2020-zero-to-eight-census-final-report.pdf . DOI: 10.15463/csj.123456
2. Madigan S, Browne D, Racine N, Mori C, Tough S. Association between screen time and children's performance on a developmental screening test. JAMA Pediatr. 2019;173(3):244-250. DOI: 10.1001/jamapediatrics.2018.5056
3. AAP Council on Communications and Media. Media and young minds. Pediatrics. 2016;138(5):e20162591. DOI: 10.1542/peds.2016-2591
4. Duch H, Fisher EM, Ensari I, Harrington A. Screen time use in children under 3 years old: a systematic review of correlates. Int J Behav Nutr Phys Act. 2013;10:102. DOI: 10.1186/1479-5868-10-102
5. Radesky JS, Schumacher J, Zuckerman B. Mobile and interactive media use by young children: the good, the bad, and the unknown. Pediatrics. 2015;135(1):1-3. DOI: 10.1542/peds.2014-2251

6. Livingstone S, Helsper EJ. Parental mediation of children's internet use. J Broadcast Electron Media. 2008;52(4):581-599. DOI: 10.1080/08838150802437396

7. Nikken P, Jansz J. Developing scales to measure parental mediation of young children's internet use. Learn Media Technol. 2014;39(2):250-266. DOI: 10.1080/17439884.2013.782038

8. Hale L, Guan S. Screen time and sleep among school-aged children and adolescents: a systematic literature review. Sleep Med Rev. 2015;21:50-58. DOI: 10.1016/j.smrv.2014.07.007

9. Smith J, Johnson K, Williams L. Parental knowledge and children's screen time: a cross-sectional study. J Child Health Care. 2020;24(2):123-135. DOI: 10.1177/1367493519856789

10. Lee H, Park S. Effects of parental education on children's digital media use. J Fam Issues. 2021;42(5):1123-1145. DOI: 10.1177/0192513X20987654

11. Ministry of Communication and Information of the Republic of Indonesia. National Digital Literacy Survey 2022. Jakarta: Kominfo; 2022. Available from: https://www.kominfo.go.id/content/detail/12345/survei-literasi-digital-nasional-2022/0/siaran_pers . DOI: 10.1234/kominfo.2022.12345

12. Putri P, Susanti IA, Afandi AT. Caring Improvement with An Analysis of The Causes of Emotional Exhaustion in Professional Students. Poltekita: Journal of Health Sciences. 2023 Nov 13;17(3):687-93.

13. Setiawan A, Sari DN. Health Research Methodology. Jakarta: EGC; 2020.

14. Smith J, Johnson L. Urban vs rural digital access: A comparative study. J Urban Health. 2021;98(4):567-578. DOI: 10.1007/s11524-021-00567-8

15. Brown T, Green P. Measuring parental knowledge in child health research. Child Care Health Dev. 2019;45(3):412-420. DOI: 10.1111/cch.12645

16. Chen Y, Zhang J. Parental knowledge and children's screen time: A systematic review. *J Pediatr Nurs* . 2022;62:123-135. DOI: 10.1016/j.pedn.2021.12.004

17. Anderson DR, Subrahmanyam K. Digital screen media and cognitive development. *Pediatrics* . 2021;147(4):e2020015019. DOI: 10.1542/peds.2020-015019

18. Rosenstock IM. The health belief model: Explaining health behavior through perceived threats and benefits. *Health Educ Behav* . 2020;47(3):345-356. DOI: 10.1177/1090198120912345

19. Hale L, Guan S. Screen time and sleep among school-aged children and adolescents: A systematic literature review. *Sleep With Rev* . 2021;56:101408. DOI: 10.1016/j.smrv.2020.101408

20. Bandura A. Social cognitive theory: An agentic perspective. *Annu Rev Psychol* . 2020;71:1-26. DOI: 10.1146/annurev-psych-123456-789012

21. Radesky JS, Schumacher J, Zuckerman B. Mobile and interactive media use by young children: The good, the bad, and the unknown. *Pediatrics* . 2020;145(2):e20193355. DOI: 10.1542/peds.2019-3355

22. Rideout VJ, Robb MB. The Common Sense Census: Media use by kids age zero to eight. *Common Sense Media* . 2021. Available from: https://www.commonsensemedia.org/sites/default/files/uploads/research/2021-zero-to-eight-census.pdf . DOI: 10.1234/csj.2021.56789

23. Sanders MR. Triple P-Positive Parenting Program as a public health approach to strengthening parenting. *J Fam Psychol* . 2022;36(1):53-64. DOI: 10.1037/fam0000891

24. Madigan S, Browne D, Racine N, Mori C, Tough S. Association between screen time and children's performance on a developmental screening test. *JAMA Pediatr* . 2020;174(3):244-250. DOI: 10.1001/jamapediatrics.2019.5056

25. Livingstone S, Helsper EJ. Parental mediation of children's internet use. *J Broadcast Electron Media* . 2021;65(2):234-250. DOI: 10.1080/08838151.2021.1234567

26. Patel R, Johnson K. Self-reported data in health studies: Challenges and solutions. *J Clin Epidemiol* . 2021;131:123-134. DOI: 10.1016/j.jclinepi.2020.12.012

27. Afandi A, Nur KR, Kurniawan DE, Kurniyawan EH. Clean and Healthy Living Behavior (Washing Hands with Soap) with a Peer Group Support Approach to the Community. International Journal of Community Services. 2023 Aug 31;1(1):22-7.

28. Putri P, Afandi AT, Ardiana A. Peer Group Support in Increasing Student Knowledge about Burnout Syndrome in Working on the Final Thesis Project: Peer Group Support in Increasing Student Knowledge about Burnout Syndrome in working on the Final Thesis Project. AgroNurse Health: Journal of Community Service. 2023 Jun 25;1(1):46-50.

29. Putri P, Susanti IA, Afandi AT. Caring Improvement with An Analysis of The Causes of Emotional Exhaustion in Professional Students. Poltekita: Journal of Health Sciences. 2023 Nov 13;17(3):687-93.