Research Article

Psychoeducation: Impact of Gadget Use on Early Childhood at PAUD TKM Al-Khoiriyah

Melly Amalia Vardia[1]*, Rizka Fibria Nugrahani[1], Nixie Devina Rahmadiani[2], and Wuli Oktiningrum[3]

[1]Psikologi, Universitas Negeri Malang, Indonesia
[2]RSU Karsa Husada, Indonesia
[3]Pendidikan Guru Sekolah Dasar, Universitas Raden Rahmat, Indonesia

Abstract.
This research aims to increase parents' comprehension of the influence of gadget use on early development by providing psychoeducation to parents of TKM Al-Khoiriyah students. This study uses quantitative research methods with experimental techniques to view the differences in parental knowledge before and after psychoeducation is conducted. Data collection was done using a questionnaire of parents' knowledge and efforts regarding the use of gadgets in preschool children. This instrument consists of five dimensions including 1) early childhood growth and development, 2) Screen time in children, 3) positive impact on gadget use, 4) negative impact of gadget use, 5) parental efforts in overcoming gadget use in children. Data analysis was carried out using Wilcoxon Signed Rank Tail. The results of the analysis stated that there were differences in knowledge among mothers after psychoeducation on the impact of gadget use on early childhood. The probability value shows that the p-value is 0.017 ($p < 0.05$).

Keywords: psychoeducation, gadget, early childhood

Corresponding Author: Melly Amalia Vardia; email: melly.amalia.fpsi@um.ac.id

Published: 8 November 2024

Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the ICoPsy 2024 Conference Committee.

1. Introduction

Gadgets are a necessity in today's digital era. Gadgets can be defined as small devices that have practical functions and are designed with advanced technology, such as laptops, mobile phones, smartphones, notebooks, and tablets [1]. In general, gadgets can be used for a variety of needs, including to communicate, access various kinds of information, and to obtain entertainment and play games [2]. The use of gadgets in everyday life has benefits that are felt by various groups, ranging from adults to children. Gadgets have a very strong influence in supporting daily life both in activities in work and other fields, as well as supporting the implementation of teaching and learning activities, supporting the economic system by conducting digital sales, and so on.

The use of gadgets in Indonesia is also a common thing. According to a survey conducted by the Central Statistics Agency (BPS) regarding Indonesian Telecommunication Statistics, more than half of Indonesia's population has connected to the internet in 2022 (66.48%), and in 2021 it is 62.10%. In terms of age groups, 47.64% of internet users are in the age range of 25-49 years, while 14.69% are aged 19-24 years (Indonesia, n.d.) The data also shows that 24.96% of early childhood use and access the internet. When broken down, the use of gadgets in children aged 0-4 years or toddlers is 25.5% while those aged 5-6 years are 52.76%. This percentage is also illustrated through internet access carried out by toddlers of 18.79% and children aged 5-6 years of 39.97% (dataindonesia.id) [20].

The increasing use of gadgets in society has various impacts, which can affect both physical and psychological aspects. In adults, a number of impacts can be felt, including visual disturbances, impaired concentration, gadget addiction, and disturbed sleep patterns. Whereas in children, especially in early childhood, it is not recommended to use gadgets with a variety of impacts that can interfere with children's growth and development, including radiation exposure, eye and brain health disorders, obesity, aggressive behavior [3].

A number of literatures explain the impact of gadget use on early childhood, in a study preschool children (3-6 years) in Pontianak City, stating that there are psychosocial development effects, that children tend to enjoy playing with gadgets rather than playing with peers [21]. This is also reinforced by the results of research that the use of gadgets in early childhood in Setia Bumi Hamlet, Seputih Banyak District has an influence on early childhood social development, when children use gadgets, they will be exposed to content that has elements of violence, and if their use is not accompanied by parents, children will practice the violent behavior they have watched [4].

The American and Canadian Pediatric Association review states that children aged 0-2 years should not be exposed to gadgets at all. Children aged 3-5 years can only use gadgets with a duration of 1 hour per day, while children aged 6-18 years are limited to using gadgets with a duration of 2 hours a day [5]. Ferliana [6] explains from a neurophysiological point of view, that the brain of children under 5 years old is still in a developmental stage. Children's brain development will be more optimal if stimulated with the five senses directly. If children under the age of 5 often use gadgets, without being accompanied by parents, it results in a lack of focus on the child, and a lack of opportunity for children to interact with the surrounding environment.

The use of gadgets in early childhood is also inseparable from the role of parents who provide facilities and access to children. Survey data collected by KPAI states that parents give gadgets to children as a means of seeking knowledge, information, used to make video writing, so that children often play at home, and so that children are not outdated. However, it is also generally known that in using gadgets, parents do not provide assistance to their children.

The role of parents has a central position to know and understand the impact of gadget use on children, by conducting appropriate supervision and assistance, and preventing negative impacts that arise.

2. Literature Review

2.1. Psychoeducation

A specialized method of addressing the challenges of mental change is called psychoeducation, which is a course of action offered to individuals and families. The action modality known as psychoeducation, which is given by experts, combines educational interventions with psychotherapy [7]. Psychoeducation includes a process of socialization and exchange of opinions for patients and professionals, contributing to the destigmatization of psychological disorders that are at risk of hindering treatment [8].

Psychoeducation can be implemented in various places in various groups or households. psychoeducational actions have media in the form of records such as posters, booklets, leaflets, videos and in the form of exploration as needed. the process of providing psychoeducation is very necessary for family life as the key to the success of the intervention [8].

2.2. Early Childhood

Early childhood is children who are aged 0-8 years. According to Beichler and Snowman [9] young children is a child who is between 3-6 years old. Early childhood development is characterized by an individual's unique pattern of growth and development in the areas of cognition, physicality, and growth. patterns of development that are unique to the phases a kid is going through in terms of physical, cognitive, socioemotional, creative, linguistic, and communication elements [10]. Considering the phases that the youngster is experiencing. Based on a range of definitions, the researcher comes to the

conclusion that a child in the early childhood developmental stage is anyone between the ages of 0 and 8. those between the ages of 0 and 8 who are going through a period of physical and mental development. growth on all levels, mental and physical.

It's common to refer to early infancy as the "golden age" or golden period. Nearly every child's potential goes through a delicate period at this age when they grow and develop aggressively and quickly. Since every person develops differently, no two children are alike in their growth. Growth and development require both intense stimulation and nutrient-rich, well-balanced meals. Children can effectively complete their developmental activities if they receive intense stimulus from their surroundings.

Children are not yet able to reach their full potential during their childhood. realign themselves with their inner potential. They frequently like to play simultaneously, want to win by themselves, and alter the rules of the game to suit their own needs. frequently alter the rules of the game to their own advantage. In order to maximize development in all its forms—physical and psychological—educational endeavors are therefore necessary. It is crucial to develop children's potential. These potentials encompass linguistic, cognitive, socioemotional, physical, and other capacities.

3. Method

This study used quantitative research methods with experimental techniques to review differences in parental knowledge before and after psychoeducation was conducted.

The population in this study were all guardians of PAUD TKM Al-Khoiriyah students. The sampling technique used in this study was total sampling, namely using all members of the population as samples in this study with a sample size of 38 people. The instrument used is a questionnaire sheet of knowledge and efforts of parents about the use of gadgets in pre-school children. This instrument consists of 5 dimensions including 1) early childhood growth and development, 2) Screen time in children, 3) positive impact on gadget use, 4) negative impact of gadget use, 5) parental efforts in overcoming gadget use in children.

4. Result and Discussion

The results of the questionnaires collected from student guardians were then processed into descriptive data, which showed the following results.

Table 1: Crosstabulation Data Education Level of Parents and Duration of Using Gadget.

		Duration						Total
		0	1	2	3	4	5	
Education Level		1	0	0	1	1	0	3
	PT	1	0	0	0	0	0	1
	SD	0	0	0	0	1	0	1
	SMA	9	2	4	2	2	0	19
	SMP	2	0	1	3	0	1	7
Total		13	2	5	6	4	1	31

In terms of parents' level of education, the results showed that one (1) parent had an elementary school education, one (1) parent had a university education, 19 parents had an upper secondary education, and 7 parents had a junior secondary education. This is illustrated through the graph.

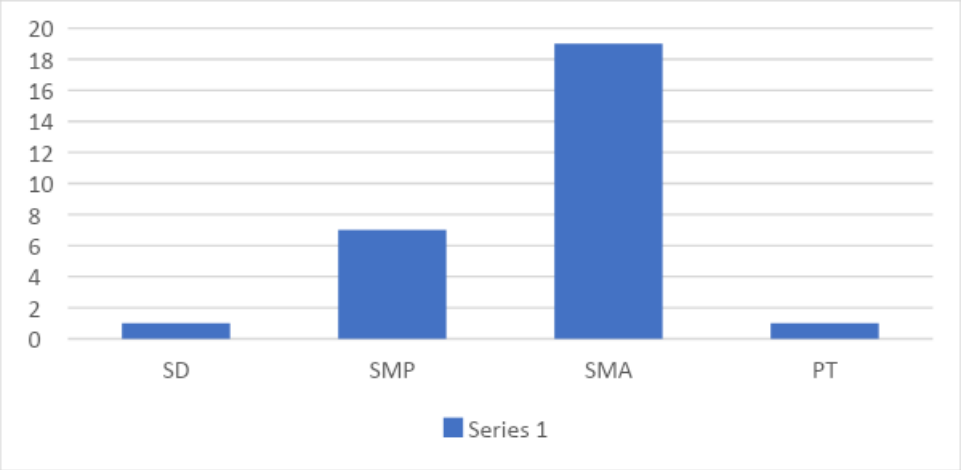

Figure 1: Graphics Education Level of Parents of TKM Al-Khoiriyah Students.

In terms of the duration of gadget use given to children, parents with tertiary education level gave gadgets for less than 1 hour (1 person). Parents with elementary school education level gave gadgets with a duration of 4 hours (1 person). Parents with junior high school education level gave gadgets with a duration of < 1 hour (2), duration of 2 hours (1 person), duration of 3 hours (3 people), duration of 5 hours (1 person). Parents with an upper secondary education level provide gadgets with a duration of < 1 hour (9 people), 1 hour (2 people), 2 hours (4 people), 3 hours (2 people), 4 hours (2 people).

In terms of pretest and postest scores, the pretest scores showed 5 people in the low category, 25 people in the medium category. The postest score shows 6 people in the low category, 22 people in the medium category, and 2 people in the high category.

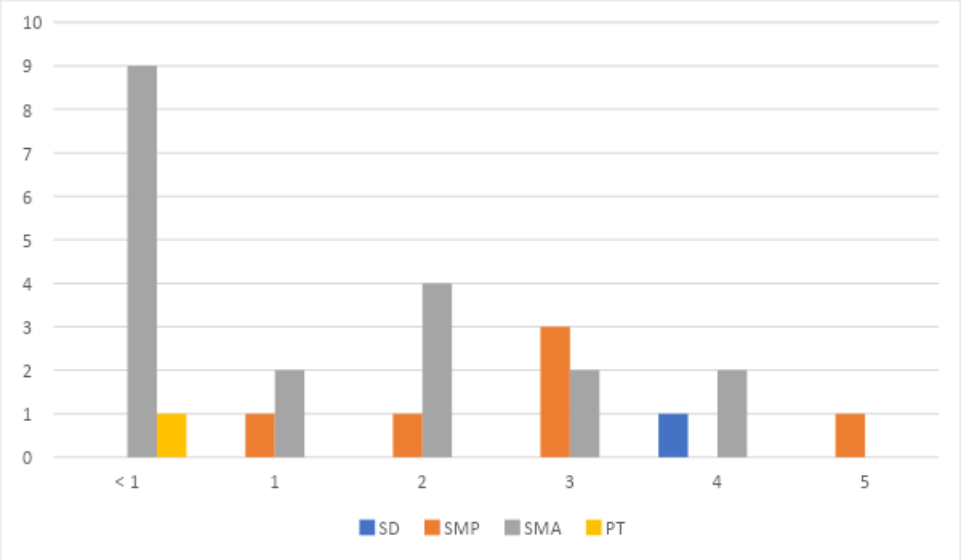

Figure 2: Duration of Using Gadgets on Students TKM Al-Khoiriyah.

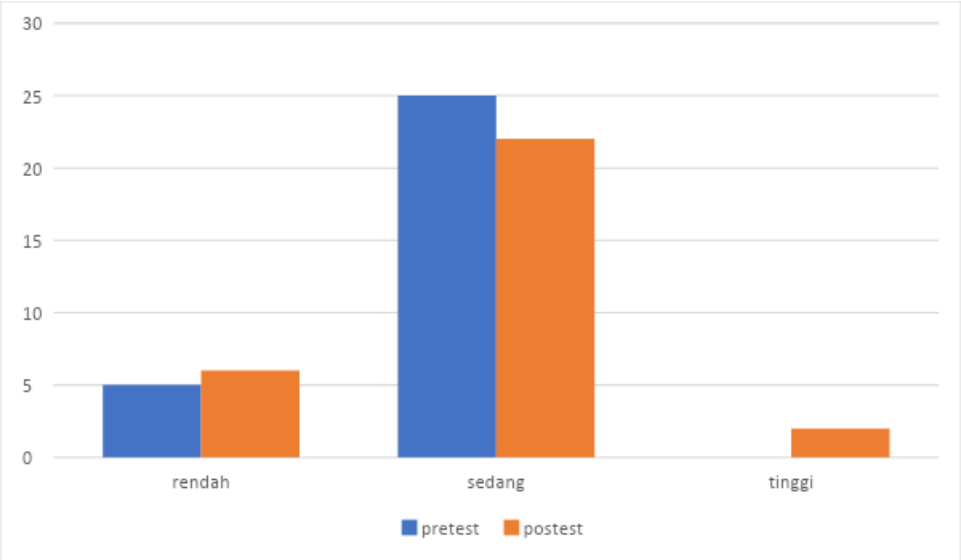

Figure 3: Graphics Pretest and Postest Score on Parents.

TABLE 2: Table Normality Test.

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pretest	.272	31	.000	.870	31	.001
postest	.265	31	.000	.895	31	.005

The results of the normality test are shown in the Kolomogrov-Smirnov column which states that the pretest data is not normally distributed (sig. 0.000 <0.05) while the postest data shows that the data is also not normally distributed (sig.,000 <0.05). The results of the assumption test are the basis for determining the hypothesis test

used using non-parametric statistical techniques with the Wilcoxon Signed Rank Tail difference test.

The results of the Wilcoxon Signed Rank Tail difference test are shown in the table below

Table 3: Result of Wilcoxon Signed Rank Tail.

	postest - pretest
Z	-2.383[b]
Asymp. Sig. (2-tailed)	.017
a. Wilcoxon Signed Ranks Test	
b. Based on negative ranks.	

The table in the test statistics output shows a Z value of -2.383 with a 95% confidence level or sig. 5% and two-sided test. The Z table value is ± 1.96. So it can be concluded that -Z count < -Z table (-2.383 < -1.96). So that there is a difference in knowledge in mothers after psychoeducation on the impact of gadget use on early childhood. The probability value shows that the p value is 0.017 (p < 0.05).

Table 4: Score Different Value.

		N	Mean Rank	Sum of Ranks
postest - pretest	Negative Ranks	5[a]	9.60	48.00
	Positive Ranks	16[b]	11.44	183.00
	Ties	10[c]		
	Total	31		

31 data used in the statistical analysis, there are 5 data that have negative before and after score difference values, 16 data that have positive values, and 1 data that ties. The smallest value is the negative difference value, which is 5.

The value of r (effect size) is obtained after calculating using the formula $r = z/\sqrt{N}$ so that the effect size (r) value is -0.303 which states that psychoeducation on the impact of gadget use given to guardians of TKM Al-Khoiriyah PAUD students has an influence on the moderate category.

Gadgets are a major necessity in today's digital era. Various groups feel and use gadgets in everyday life to support activities. Starting from adults to children using gadgets in daily activities, even early childhood is also not separated from the role of gadgets in daily life.

The use of screen time on gadgets is stated to have a number of positive and negative impacts. Positive impacts that can be given include making calls, sending messages, searching for information, chatting, and using social media [11]. Gadgets can also be used to support and increase children's knowledge and help children to adapt to technological developments [12]. Gadgets are also used as a learning medium for children by improving thinking skills with a variety of activities that stimulate and stimulate creativity, so that with the correct use of gadgets it can increase intelligence and support children's cognitive development [13].

In addition to the positive impact of using gadgets in early childhood if not limited and supervised, it will have a number of negative impacts, on social skills children will tend to be introverted and prefer to be alone rather than communicate with friends. If gadgets are used regularly, it can inhibit children's speaking skills, cognitive abilities will be inhibited so that it will affect the way children write, learn, and read. In children who have gadget addiction, it can lead to emotional stress and social relationships emotional stress and poor social relationships [14].

The above presentation explains that gadgets can affect children's development if their use is not limited and supervised by parents. The role of parents is very important in accompanying children when using gadgets. If parents have low control and non-optimal supervision of children, it will have a negative impact on children's social behavior and intelligence (8) A number of studies explain the low parental control in gadget use [15], where parents lend gadgets to children parents who let children use gadgets at inappropriate times [16] and parents' inconsistency in setting the time to use gadgets [15].

The Academy of Pediatrics (AAP) and the World Health Organization (WHO) provide recommendations for screen time rules for early childhood, in early childhood with ages under 18 months it is recommended to avoid screen time, except video chatting with close relatives. the age range of 18-24 months the ideal condition is when the child does not do screen time at all, and if you want to do screen time it is expected to be less than 1 hour per day only when needed. The age range of 2-5 years is recommended to do screen time no more than 1 hour per day, and it would be better if it is less than the specified time. In both age categories, it is expected that children only watch quality educational content with a companion during screen time [17].

The results of the questionnaire distributed to 31 mothers of TKM Al-Khoiriyah PAUD students showed that only 13 parents gave screen time to children with a duration

of under 1 hour, while the remaining 18 people gave screen time to children with a duration of over 1 hour. Even most of the parents allow their children to play gadgets with a duration of 3 hours. This is in line with the vulnerable age of 2-4 years tend to use smrtphone for 2 hours per day [18]. The results of a survey conducted by Mott Children's Hospital on the length of time children use gadgets, 26% of children aged 2-5 years use an average of three hours a day to play gadgets.

Children who use gadgets excessively are influenced by a number of circumstances, including where they live—in an urban or rural location, for example. It is a common misconception among parents that providing their kids with electronics is a must of modern living. But oftentimes, parents neglect to consider the advantages and disadvantages of providing their kids with electronics, which can be advantageous or detrimental depending on how they use them. Providing kids with devices can be advantageous since they can express their creativity through smartphone games or imaginative programs that stimulate their senses. [2]. However, if kids use electronics excessively and without parental supervision, it can lead to addiction and dependency [14].

The guidance provided by parents is of course also based on the knowledge and ability of parents in providing assistance and limitation to children in using gadgets. The results of the pre-test conducted on TKM Al-Khoiriyah PAUD student guardians were 5% of student guardians had knowledge related to the impact of gadget use in the low category and 25% of student guardians had knowledge related to the impact of gadget use in the medium category.

Findings from the Michael Cohen Group, which focuses on children's education, state that there are 60% of parents who have 12-year-old children who are preoccupied with gadgets. Furthermore, 30% of them use gadgets simultaneously, and 36% percent of them do not know the long-term effects of excessive gadget use [14].

The picture related to parents' knowledge about the impact of gadget use is a problem that needs to be given a solution in the form of psychoeducation so that parents can understand the effects produced and increase parental initiative in controlling gadget use.

Parents are expected to proactively think about the media used by children and talk about the digital media, and most importantly parents can become mentors in using the available media, which means that teaching children how to use digital media as a tool to create, connect, and learn [18].

Psychoeducation as an intervention method is carried out by providing information based on psychological science that can influence the psychosocial well-being of the community in the form of community education. The emphasis in psychoeducation is on developing and providing information, developing problem-solving skills, and developing crisis intervention skills [19]. The results of psychoeducation conducted to all guardians of PAUD TKM Al-Khoiriyah students are shown through the post-test results where there are 6 people with knowledge related to the impact of gadget use in the low category, there are 22 people with knowledge related to the impact of gadget use in the medium category, there are 2 people with knowledge related to the impact of gadget use in the high category. The results of the Wilcoxon Signed Rank Tail difference test show that there are differences in knowledge in mothers after psychoeducation on the impact of gadget use on early childhood. It can be concluded that there is an increase in the level of knowledge of the impact of gadget use on the guardians of TKM Al-Khoiriyah PAUD students.

The role of psychoeducation in increasing parents' knowledge in understanding the impact of gadget use and gadget control on children has also been carried out by [19], which shows that psychoeducation is effective in increasing parents' knowledge and understanding of the use of gadgets in early childhood.

The results of the psychoeducation conducted peril be followed up with programs such as training to make educational games so that children can be actively involved in activities that stimulate their development rather than games that focus on gadgets, as well as making family schedules related to gadget use in early childhood.

References

[1] Jeyagowri R. Influence of Smart Gadgets on Pre-school Children. IARJSET. 2021;8(8): https://doi.org/10.17148/IARJSET.2021.8808.

[2] Andriani R, Basri B. The Effect Of Addiction To Playing Online Games On Learning Motivation In Students At Sdn Subangjaya 2, Sukabumi City. Risenologi. 2022;7 1a:77–83.

[3] Anggraeni S. Pengaruh pengetahuan tentang dampak gadget pada kesehatan terhadap perilaku penggunaan gadget pada siswa SDN Kebun Bunga 6 Banjarmasin. Faletehan Health Journal. 2019;6(2):64–8.

[4] Mukarromah T. Dampak penggunaan gadget pada perkembangan sosial anak usia dini di Dusun Setia Bumi Kecamatan Seputih Banyak. Institut Agama Islam Negeri

Metro, Fakultas Tarbiyah dan Ilmu Keguruan, Jurusan Pendidikan Agama Islam. Skripsi; 2019.

[5] Rowan C. (2013). The impact of technology on the developing child [internet]. US: The Huffington. http://www.huffingtonpost.com/crisrowan/technologychildren-negativeimpact_b_3343245.html. Diakses pada 30 Maret 2018.

[6] Hartini N. "Metodologi Pendidikan Anak dalam Pandangan Islam" (Studi tentang Cara-cara Rasulullah SAW dalam Mendidik Anak). Jurnal Pendidikan Agama Islam-Ta'lim. 2011;9(1):31–43.

[7] Cartwright M. (2007). *Psychoeducation among caregivers of children receiving mental health services* [Ohio State University]. oai:etd.ohiolink.edu:osu1187029938

[8] Supratiknya A. (2011). *Merancang program dan modul psikoedukasi edisi revisi*. Penerbit Universitas Sanata Dharma. https://repository.usd.ac.id/12880/

[9] Yulianti, D. (2010). Penerapan Model Bermain Berbasis Kontekstual untuk Meningkatkan Minat Sains Siswa Sekolah Dasar. *Lembaran Ilmu Kependidikan, 39*(1).

[10] Ribeiro JA, de Resende CM, Lopes AL, Mestriner W Jr, Roncalli AG, Farias-Neto A, et al. Evaluation of complete denture quality and masticatory efficiency in denture wearers. Int J Prosthodont. 2012;25(6):625–30.

[11] Jasiah, Umul Khasanah, Wina Arsy, Nu Latifah, & Zulham. (2023, September 30). *View of Improving Early Childhood Language Development through "Kiki Miu-Miu" YouTube Videos*. https://journal.iaimnumetrolampung.ac.id/index.php/jcd/article/view/3780/1324

[12] Pangastuti, R. (2017). *View of Fenomena Gadget dan Perkembangan Sosial bagi Anak Usia Dini. 2*(2), 165–174. https://doi.org/https://doi.org/10.51529/ijiece.v2i2.69.

[13] Annisa N, Padilah N, Rulita R, Yuniar R. Dampak Gadget Terhadap Perkembangan Anak Usia Dini. Jurnal Pendidikan Indonesia. 2022;3(09):837–49.

[14] Zain ZM, Jasmani FN, Haris NH, Nurudin SM. Gadgets and Their Impact on Child Development. Proceedings. 2022;82(1):1.

[15] Ayu IM, Titik R, Yuli S. Preschoolers' mental health status based on their mobile gadget usage. J Phys Conf Ser. 2020;1469(1):012054.

[16] Fitriahadi EF, Tyastiti VH. THE IMPACTS OF THE USE OF GADGETS ON THE DEVELOPMENT OF CHILDREN 3-6 YEARS OF AGE. SEAJOM: The Southeast Asia Journal of Midwifery. 2020;6(1):1.

[17] Pediatrics AA. of. (n.d.). *American Academy of Pediatrics announces new recommendations for children's media use*. Retrieved May 10, 2024, from https://medicalxpress.com/news/2016-10-american-academy-pediatrics-children-media.html

[18] Cho KS, Lee JM. Influence of smartphone addiction proneness of young children on problematic behaviors and emotional intelligence. Comput Human Behav. 2017;66(C):303–11.

[19] Azamiah MZ, Agustiani H. Program Psikoedukasi Penggunaan Gadget pada Anak Usia Dini. Murhum : Jurnal Pendidikan Anak Usia Dini. 2023;4(1):234–44.

[20] Indonesia BP. (n.d.). *Statistik Telekomunikasi Indonesia 2022*. Retrieved January 7, 2024, from https://www.bps.go.id/id/publication/2023/08/31/131385d0253c6aae7c7a59fa/statistik-telekomunikasi-indonesia-2022.html

[21] Trinika Y, Nurfianti A, Abror I. Pengaruh penggunaan gadget terhadap perkembangan psikososial anak usai prasekolah (3-6 tahun) di TK Swasta Kristen Immanuel tahun ajaran 2014-2015. Jurnal Proners. 2015;3(1):1–9.