The Relationship Between the Duration of Screen Time and Appetite in Children at Islamic Elementary Schools in Medan City

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Abstract. The recommended duration of screen time by IDAI (Indonesian Pediatrician Association) and the World Health Organization is no more than 2 hours per/day. Smartphone dependence affects a person's eating behavior. This study aims to determine the relationship between the duration of playing gadgets with appetite in children. The research method used is quantitative method with analytic observational. The population in this study totaled 3348 people and a sample of 70 people. The sampling technique used was purposive sampling using the Slovin formula. Based on the results of descriptive statistical data analysis, the duration of playing gadgets has a percentage of 60% in the long category and 62.9% in the low category. In conclusion, this study shows a relationship between the duration of playing gadgets with appetite in children.

Keywords: screen time, appetite, children

1 Introduction

According to the World Health Organization (WHO), the word used to describe the duration of time spent watching electronic screens, such as televisions, computers, mobile devices, gadgets, and games, is screen time. According to WHO and the American Academy of Pediatrics (AAP) (2019), the recommendations for staring at electronic screens for >13 years old are categorized into two groups, namely enough if ≤ 2 hours per day and more if > 2 hours per day. Likewise, IDAI (Indonesia Pediatrician Association) recommends that children aged 12-18 years have a duration of staring at an electronic screen for no more than 2 hours/day. [1] [2].

In this digital era, smart electronic devices, often known as "gadgets", have become a part of people's daily lives around the world. This phenomenon has brought profound changes in the way we communicate, work, learn, and access information. Especially if you pay attention to the use of gadgets in children, at this time they tend to be increasingly exposed to playing gadgets, such as smartphones, tablets, and computers. The reality is that playing with this gadget has become part of children's daily lives, both for educational, entertainment, and social interaction purposes. However, the impact of playing this gadget on children's health is a major concern, especially related to their diet and appetite. Gadgets, such as smartphones, tablets, and laptops, are no longer just used as a means of communication but have become the center of control for various aspects of our lives. Supported by the internet through almost unlimited access, gadgets allow us to connect with others, access the latest news, run a business, manage finances, entertain ourselves, and even monitor health, all in the palm of our hands[3].

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Watching while playing with gadgets while feeding children is a new habit for many parents today. This is due to the fact that gadgets can make children sit still and make them feel like their food is being enjoyed. However, it turns out that the convenience will endanger parents. Watching devices at the age of 5-8 years is associated with a poor diet. According to research, children who eat while watching gadgets show lower consumption of fruits and vegetables and consumption of unhealthy foods such as biscuits, chocolate, and snacks that are high in sugar, salt, and fat. In addition, this study proves that parents set a bad example for their children to adopt their eating habits. Children will continue to feel unfull because they are unaware of the food they eat while watching gadgets. This habit will cause children to become obese indirectly. In addition, children will follow their parents' eating habits if they often see their parents eating while holding gadgets [4].

The reason the researcher researched Islamic Elementary Schools in Medan City was that based on the initial survey, the researcher found a problem, namely that there was an intensity of the duration of playing gadgets that was more than the time limit that was good for health recommended by IDAI (Indonesia Pediatrician Association) and also WHO. For this reason, the problem statement in this study is "Is there a relationship between the duration of playing games and appetite in Islamic Elementary School in Medan City ?". Meanwhile, the purpose of the study is to find out the relationship between the duration of playing gadgets and appetite in Islamic Elementary School children in Medan City, and specifically to find out what is the relationship between the duration of playing gadgets and appetite in children.

2 Literature Review

Research on gadgets is becoming increasingly important because it has an impact on daily life and the challenges faced, so solutions are needed to overcome the consequences caused. Through this research, it is hoped that strategies can be found to optimize the benefits of gadgets while minimizing their risks so that people can use them wisely to improve the quality of life and common welfare [5].

A report by the Central Statistics Agency (BPS) said that in 2022, 33.44 % of children in Indonesia aged 0-6 years can already use mobile phones. However, the ability to access the internet is also available to 24.96 % of early childhood in Indonesia. Specifically in North Sumatra, according to the Central Statistics Agency (BPS), in 2021, the proportion of individuals (aged 5 years and above) who control or own a mobile phone is 65.05 %, and in 2022, it will increase to 67.71 %.

According to a survey released by the Association of Internet Service Providers Indonesia (APJII) in 2018, entitled Internet Penetration and Internet User Behavior in Indonesia, North Sumatra is the province with the most internet users on the island of Sumatra, with 6.3 %. The provinces with the next largest contribution to internet gaming are Lampung (3 %), West Sumatra (2.6 %), Riau Islands (2 %), and Aceh (1.5%). Next are Riau (1.3 %), Bangka Belitung, and South Sumatra (0.9 %), as well as Bengkulu and Jambi (0.6 %) [6].

The perception of the relationship between gadget play and appetite in children is not only related to their physical health but also their mental health and overall development. Appetite disorders in childhood can certainly have a negative impact on children's physical growth and development, as well as increase the risk of obesity, diabetes, and other eating disorders later in life.

A study found that dependence on smartphones affects a person's eating behavior. People often use smartphones while they eat and often skip meals to play smartphone. [7] a study shows that a person's eating behavior is positively correlated with the intensity of play gadget

somebody. [8] this is supported by data showing that high eating behavior was shown by 61.3 % of subjects who were classified as high on the intensity of playing their gadget. Eating behavior, which is the basic behavior needed to carry out daily activities, is influenced by emotions, mood, and triggers from the outside. [9] in other words, the level of play gadgets a person can have an impact on their eating behavior, which is influenced by emotions, mood, and triggers from the outside. These results are in line with research that found that dependence on smartphones can affect a person's eating habits. Appetite is one of the physiological functions in human life. This not only affects aspects of an individual's physical health but also has significant implications in aspects of psychological and social well-being. [7] In a modern society faced with a variety of factors that influence diet, research on appetite is becoming increasingly important to understand human eating behavior and its impact on health. [10] appetite is influenced by eating behavior. The factors that influence eating behavior include parental factors, child factors, and environmental factors. [11]

Apparently, in the study, it was explained that the eating habits of children less than 8 (eight) years old who watch gadgets while eating have a very detrimental effect. Among them are delayed growth, lack of socialization skills, inability to control or express emotions, and lack of academic abilities in the future. Sensory development will also be hampered by playing with gadgets. Therefore, parents should let their children participate in physical activity; for example, going for a walk, playing indoors, or playing outdoors. Children will get hungry quickly because of this, and they will eat voraciously without the help of gadgets. When children are not hungry, they will watch more gadgets. In this case, the role of parents is very important, and they must be able to invite children to play and provide food that is appropriate for their age so that it is easy to eat and attractive. In addition, children will function as a "mirror" of their parents, so parents can set an example for their children by not doing other activities, such as playing with gadgets while eating. [12]

According to researchers, no studies have studied the relationship between gadget play time and appetite. Some studies only produce a relationship between playing gadgets and children's diet, nutritional status, and development. Other studies have also resulted in a relationship between playing gadgets and other variables, such as physical activity and obesity. Therefore, the researcher wanted to investigate the relationship between children's appetite in Islamic Elementary Schools in Medan City and the length of time they spent playing gadgets.

3 Methodology

Analytical observational research with a cross-sectional approach or cross- sectional is the type of research used in this study. This design was chosen because it is very effective in examining the relationship between diseases and other variables related to health status at the same time. [13] The selection of this design is in accordance with the purpose of the study, which is to find out how the duration of playing gadgets is related to children's appetite. The data collected from this study is primary data. Primary data included the duration of playing gadgets in children and appetite collected by the interview method using a questionnaire. This research was conducted in March 2024 – June 2024. Located in 11 (eleven) Islamic Elementary Schools in Medan City, North Sumatra, namely:

1. SDIT Siti Hajar – Medan Tuntungan
2. SDIT Jabal Rahmah – Medan Sunggal
3. SDIT Nurul Ilmi – Medan Estate
4. SDIT Al Musabbihin – Medan Sunggal
5. SDIT Nurul Azizi – Medan Johor

6. SDIT Al Fityan – Medan Selayang
7. SDIT Bunayya – Medan Sunggal
8. SD Syafiyatul Amaliyah – Medan
9. SD Namira Islamic International School – Medan Selayang
10. SD Al Azhar – Medan Johor
11. SD Al Amjad Islamic School – Medan Sunggal

Regarding the research population, the generalization area consists of objects or subjects (people) that are selected by the researcher to be studied and then come to the conclusion [11] are parents and children between the ages of 6 and 9 years who attend Islamic Elementary Schools in Medan City. The sample is considered a representation of the population [15] determined according to the formula, namely:

$$n = \frac{N}{1+Ne^2}$$

Information:
n = Minimum number of samples required N = Population
e = Tolerable sampling error of 10 % (0.1) [13]
Mathematically, the Slovin formula can be written as **n = N / (1 + (N x e²).** With a population of around 3348 students in 11 Islamic Elementary Schools in MedanCity, then:

$$n = \frac{3348}{1+(3348\ x\ 0.1)^2} = = \frac{3348}{1+(3348\ x\ 0.01)} = \frac{3348}{1+33.48} = \frac{3348}{4.348} = 770.00$$

Thus, the minimum sample size of 3348 populations with a margin of error of 10% is **770 people.** Then, from the results of the calculation (n), and to get a proportional result evenly distributed to the entire population, it was divided into 11 (eleven) Islamic Elementary Schools in Medan City. So, we had **70 samples**.

The purposive sampling of the study used inclusion and exclusion criteria. This method is a non-probability sampling method, which refers to the characteristics and characteristics of the population that have been known beforehand. [16] The following are the requirements for inclusion and exclusion in this study:

a. Inclusion Criteria: Research subjects that must qualify as samples based on criteria are defined as inclusion criteria [15] as follows: (1) Willing to be the subject of research; (2) Have a gadget; (3) Able to speak well; (4) Parents of students whose children are active as students at Islamic Elementary Schools in Medan City; (5) Parents and students who were present at the time of the study; and (6) Students aged 6-9 years.
b. Exclusion Criteria: Research subjects that do not qualify as a sample are defined as exclusion criteria. [16] In this study, the exclusion criteria are as follows: (1) Parents and students who were not present at the time of the study; (2) Students who do not want to cooperate; and (3) Parents of students who do not fill out the questionnaire completely.

Meanwhile, the variables of this research include (1) Independent Variables or variables that affect or cause their changes. [15] The duration of playing *a gadget* is an independent or independent variable (X), and (2) Dependent Variables or variables that are influenced or become a result due to the existence of independent variables. [15] Appetite is a dependent or bound variable (Y). The operational definition and measurement aspects of each variable is presented in Table 1.

Table 1. Operational Definition and Measurement Aspects

No	Variable	Operational	How to	Measurements Result	Scale

		Definition	Measure		
1	Duration of Playing Gadget	Activities carried out through applications on students' phones and tablets, such as playing, watching YouTube and social media.	Nurmasari Questionnaire Modification Questionnaire Filling. [17]	1. Short Duration (≤ 2 hours/day) 2. Long Duration (> 2 hours/day) (American Academy of Pediatrics) [2]	Nominal
2	Appetite	It is a person's preference for a certain type of food that they want to consume.	Children's Eating Behaviour Questionnaire (CEBQ)	1. Low appetite category (if the score of response to food and emotions that increase appetite is < of the score of pleasure when eating and emotions that decrease appetite) 2. High appetite (if the score of response to food and emotions thatincrease appetite ≥ of the score of pleasure when eating and emotions that decrease appetite)[19].	Ordinal

Furthermore, the instrument used in this study is a questionnaire consisting of questions and statements about:

1) Duration of Playing Gadget: The researcher used a modification of the Nurmasari questionnaire [17] as an instrument for the variable duration of *playing gadgets*. As a result, the instrument isconsidered valid because the r result (0.666) > of the r table (0.497). Meanwhile, based on the results of the reliability test, r alpha (0.846) > 0.6 was obtained so that the instrument was declared reliable.
2) Appetite: This study uses a CEBQ (Children's Eating Behaviour Questionnaire) questionnaire. Pintautami [19] used this questionnaire created by Wardle to assess children's appetites. The validity and reliability test values are alpha 0.80.

The data of this research consists of primary and secondary data. Primary data is data collected directly from the study's initial source. To obtain primary data, the CEBQ (Children's Eating Behaviour Questionnaire) questionnaire and a questionnaire on the duration of playing gadgets were given to respondents, namely parents of Islamic elementary school children in Medan City. Secondary data is data or information obtained through literature research, sourced from existing documents or materials, and written information related to research through previous research, journals related to research, books, the Internet, and others.

Meanwhile, the data collection procedures include:

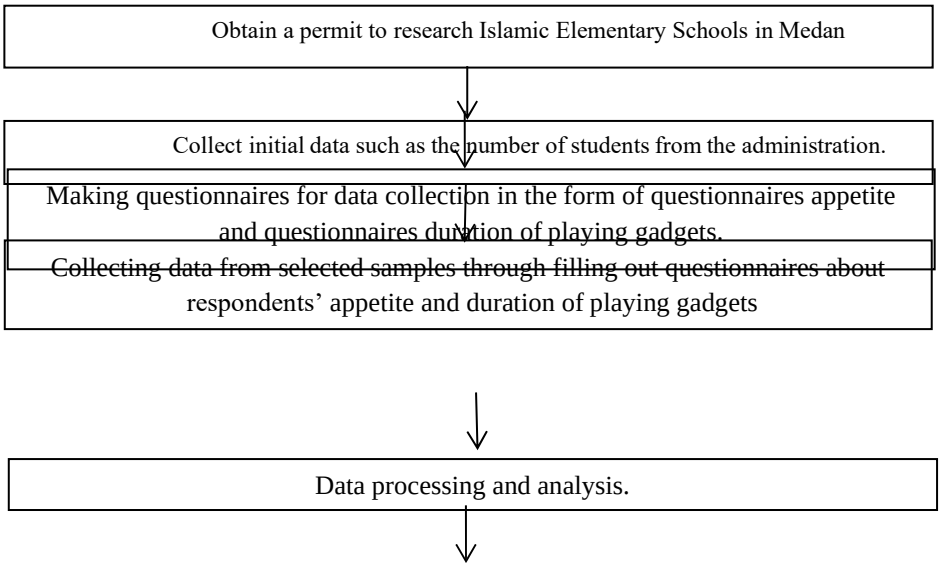

Figure 1. Data Collection Procedure Flow

Data analysis involves the following. (1) Editing (Data Examination): Editing is carried out at the data collection stage toensure that the data is accurate and complete; (2) Coding (Provision of Data Codes): Coding is carried out at the data collection stage. The application of numerical codes on data consisting of various categories is known as coding. After all the data is collected and corrected, the code is given; (3) Entry (Entering Data): The data entered is the answer to each question asked by the respondent in the form of a "code", which can be in the form of letters or numbers, which is entered into the Statistical Product Solution (SPSS) program; (4) Cleaning: All data from each respondent should be double-checked to see if there are any code errors, complements, or other errors, and then make special corrections according to those errors; and (5) Saving and Analysis: The final data storage process after correction is followed by analysis.

The data analysis involves univariate and bivariate analysis. Univariate analysis was carried out on two variables that contributed to the research results. This study describes each variable (dependent and independent) in the form of a distribution of proportions and percentages. Bivariate analysis is used to look at the relationship between two variables that are considered related (dependent variable and independent variable). In bivariate analysis, the chi-square statistical test was used to evaluate the relationship between the duration of children's appetite gadget playtime. Therefore, the research decision was made based on the following provisions: (a) the hypothesis is accepted if the significance value is less than 0.05, and (b) the hypothesis is rejected if the significance value is greater than 0.05.

4 Results

The primary data for this study came from the results of a questionnaire given to parents of Islamic Elementary School children in Medan City. With a total population of 2413 students and a sample of 70 students aged 6-9 years in grades I, II, and III. From the results of the study, the frequency distribution of respondents was obtained as shown in Table 2.

Table 2. Frequency Distribution of Respondents

Variable	Frequency	Percentage
Class		
Class I	28	40%
Class II	22	31.4%
Class III	20	28.6%
Total	**70**	**100%**
Child Age		
6 years	2	2.9%
7 years	26	37.1%
8 years	23	32.9%
9 years	19	27.1%
Total	**70**	**100%**
Age of Parents		
30 – 40 years	57	81.4%
40 – 50 years	13	18.6%
Total	**70**	**100%**
Child Gender		
Male	34	48.6%
Female	36	51.4%
Total	**70**	**100%**
Parent's Work		
PNS/TNI/POLRI	7	10%
Private Employees	23	32.9%
Housewives	40	57.1%
Total	**70**	**100%**
Parent Education		
Highschool Graduates	3	4.3%
College Graduates	67	95.7%
Total	**70**	**100%**

Source: Primary Data, 2024

Table 2 show that most of the children who answered were 7 years old amounting to 26 people (37.1%) and female amounting to 36 people (51.4%). The occupation of mothers of children is housewives amounting to 40 people (57.1%) and university-educated amounting to 67 people (95.7%).

The duration of playing gadgets in Islamic Elementary School students in Medan City is categorized based on its duration; namely, if ≤ 2 hours/day, it is categorized as short, and if it > 2 hours/day, it is categorized as long. Data on the duration of playing gadgets was obtained by filling out a questionnaire for the duration of playing gadgets filled out by students' parents. Data on the duration of playing gadgets in respondents is presented in Table 3.

Table 3. Distribution of Gadgets Playing Duration

	Frequency	Percentage (%)
Short Duration < 2 hours/day	28	40
Long Duration > 2 hours/day	42	60
Total	70	100

Source: Primary Data, 2024

A total of 42 respondents (60%), namely from the number obtained from the results of the research, respondents were categorized into long duration.

The appetite of Islamic Elementary School students in Medan City is categorized based on whether the food responsiveness (FR) and emotions that increase emotional overeating (EO) are smaller than the enjoyment of food (EF) and emotional undereating (EU) scores, then they are categorized as low appetite (R). If the food responsiveness (FR) and emotional overeating (EO) scores are greater than the enjoyment of food (EF) and emotional undereating (EU) scores, then it is categorized as high appetite. Appetite data was obtained by filling out a questionnaire about appetite filled out by students' parents. Appetite data in respondents is presented in Table 4 below.

Table 4. Appetite Distribution

	Frequency	**Percentage (%)**
Low Appetite	44	62.9
High Appetite	26	37.1
Total	70	100

Source: Primary Data, 2024

A total of 44 respondents (62.9%), namely from the number obtained from the results of the study, respondents had a low appetite. Two variables that are considered related or correlated are evaluated through bivariate analysis. To see if there is a relationship between the duration of playing gadgets and appetite, the chi-square test is used. The results of the analysis of the relationship between the duration of playing gadgets and appetite are shown in Table 5.

Table 5. Chi-Square Test Results to See RelationshipDuration of Playing Gadgets with Appetite

Duration of Playing Gadgets	**Appetite**				**Total**		**p Value**
	High		**Low**				
	N	**%**	**N**	**%**	N	%	
Short	28	40	44	62.9	70	100	0.0001
Long	26	60	42	37.1	70	100	

Source: Primary Data, 2024

The table above shows the results of the relationship between the duration of playing gadgets and appetite. Most of the respondents who had a low appetite were 44 respondents (62.9%) and had a long duration of playing gadgets, as many as 42 respondents (60%). The value of $p = 0.001 < 0.05$ is obtained, then H0 is rejected, and H1 is accepted from the chi-square test results. This shows that there is a relationship between the duration of playing gadgets and appetite.

5 Discussion

Based on the results of the study, all respondents are parents and children of the female gender. Most of the respondents who had a low appetite were 44 respondents (62.9%), and the duration of playing gadgets was 42 respondents (60%). This is in line with the findings of Kusumawati's research involving elementary school students, which found that 59.5% of respondents had a long duration of playing gadgets and found that there was a correlation between the appetite of school-age children at 84 Kendari State Elementary School and the use of gadgets [5].

The results showed that most respondents played with gadgets frequently, even every day. Between the ages of 3-4, respondents first used the device, and it belonged to the parents. Parents who started introducing gadgets. Smartphones are the most frequently used electronic devices, and the most frequently performed activity is playing games. Even though parents or caregivers supervise children when using gadgets, sometimes children still use gadgets when they are alone or without the knowledge of their parents.

A study found that most respondents play with gadgets that their parents lent; most began using such devices at the age of 3-4. Parents can help their children get to know technology early by letting them use the gadgets as entertainment so that children do not engage in activities or remain silent [19].

Children usually use gadgets such as to play games. Children's daily activities will decrease because they are more interested in playing with gadgets instead of doing other activities, including their interest in eating. Because they spend more time playing with gadgets, they become less active. [20] regularly giving the child gadgets can cause them to become more spoiled and rebellious, such as refusing to lend anything they bring or going against the words of their parents, including refusing to eat [3].

Based on the results obtained, the majority of children have to use a distraction gadget when eating, as much as 67.1%, which increases the child's appetite more than not using the gadget. The results of this study also showed that children sometimes skip meals because of a play gadget.

According to research, children who have the habit of eating while watching gadgets have a significant negative effect. Negative effects include growth retardation, lack of socialization and interaction skills, inability to control or express feelings, and lack of academic ability in the future. Play gadgets will also hamper sensory development. Therefore, parents should let their children participate in physical activities such as going for a walk, playing indoors, and playing outdoors. This will make the child feel hungry quickly, and hungry children will eat with pleasure without the help of devices. Conversely, when they are not hungry, their consumption will increase due to watching gadgets. In this case, the role of parents becomes very important. Parents should be able to offer children age-appropriate activities so that they are happy and interesting to eat. In addition, children will serve as a "mirror" of their parents, and parents should set an example for their children by not eating while holding gadgets [12].

6 Conclusions

Based on research data that has been obtained at the Islamic Elementary School in Medan, the results are as follows:

1) Students of Islamic elementary schools in the city of Medan tend to have a long (>2 hours/day) duration of play gadgets, which is as much as 60%, while those who have a short duration of play gadgets tend to be only 40%.
2) The majority of Students of Islamic Elementary Schools in Medan City have low appetites, as much as 62.9%, while those with high appetites are only 37.1%.
3) The test results chi-square correlates variable X (duration of play gadget) with variable Y (appetite).

With regard to these conclusions, the researchers recommend:

1) Parents and schools should work together to monitor the child's appetite, such as mutually sharing experiences. This could then result in solutions reducing or preventing play gadgets, and the solution could increase the child's appetite.

2) Parents also have to make time limits on children's play gadgets or divert play activities gadgets with other activities, such as playing with traditional toys, outdoor activities, or other activities either indoors or outdoors.
3) Researchers hope that further research can be carried out with variables related to gadgets and appetite.
4) The Medan City Government, through the Department of Education, must be concerned with the duration of playing games by Elementary School students, especially Islamic Elementary Schools, so that their academic abilities are not impaired. This is important in order to produce quality students in the future.

References

[1] World Health Organization (WHO), American Academy of Pediatric (AAP), "Rekomendasi Menatap Layar Elektronik", Hasil Survey, 2019.
[2] American Academy of Pediatrics and Public Education Committee (AAP).,"Children, Adolescents, and Television", Pediatr, vol. 4, no.1, pp. 1–15, 2001.
[3] Gunawan, M. A. A., "Hubungan Bermain Gadget Terhadap Perkembangan SosialAnak Prasekolah di TK PGRI 33 Sumurboto Banyumanik", Universitas Diponegoro, 2017.
[4] Pearson, N, dkk., "Clustering and correlates of screen-time and eating behaviours among young children", BMC Public Health, vol. 18, pp. 753, 2018.
[5] Kusumawati, E., Fathurrahman, T., dan Tizar, E. S., "Hubungan antara Kebiasaan Makan Fast Food, Durasi Bermain Gadget dan Riwayat Keluarga dengan Obesitas pada Anak Usia Sekolah (Studi di SDN 84 Kendari)", Jurnal Kedokteran & Kesehatan, vol. 6, no. 2, pp.87–92, 2020.
[6] Asosiasi Penyelenggara Jasa Internet Indonesia (APJII)., "Penetrasi dan Perilaku Pengguna Internet Indonesia Survey 2019", Technopreneur, Hasil Survey, 2022.
[7] Kim, Y., Lee, N., Lim, Y., "Gender differences in the association of smartphoneaddiction with food group consumption among Korean adolescents", PublicHealth, no. 145, pp. 132-135, 2017.
[8] Kartika Wijaya. "Hubungan Intensitas Bermain Smartphone dengan Perilaku Makan pada Emerging Adults", Jurnal Ilmiah Mahasiswa Universitas Surabaya, vol.8, no.1, 2019.
[9] Meule, A., Vögele, C., "The psychology of eating", Specialty Grand Challenge Article, vol. 4, no. 215, 2013.
[10] Cahyaningrum., "Leptin Sebagai Indikator Obesitas, Sandubaya Mataram". Jurnal Kesehatan Prima, vol. 1, no. 1, pp. 71, 2015.
[11] Arali., "Nafsu Makan dan Faktor yang Mempengaruhiny", Artikel Penelitian, 2011.
[12] Jusiene, R, dkk., "Screen Use During Meals Among Young Children: Exploration of Associated Variables", Medicina (Kaunas), vol. 55, no. 10, pp. 688, 2019.
[13] Nasir, A., Muhith, A. dan Ideputri, M., "Metodologi Penelitian Kesehatan: Konsep Pembuatan Karya Tulis dan Thesis untuk Mahasiswa Kesehatan", Yogyakarta: Nuha Medika, 2018.
[14] Sulistyaningsih, H., "Gizi Untuk Kesehatan Ibu dan Anak". Yogyakarta: Graha Ilmu, 2011.
[15] Sugiyono., "Metodologi Penelitian Kuantitatif, Kualitatif Dan R&D", Bandung: ALFABETA, 2013.
[16] Notoatmodjo, S, "Promosi Kesehatan dan Perilaku Kesehatan", Jakarta: PT Rineka Cipta, 2012.

[17] Nurmasari, A., “Hubungan Intensitas Bermain Gadget dengan Keterlambatan Perkembangan pada Aspek Bicara dan Bahasa pada Balita di Kelurahan Tambakrejo Surabaya”, Universitas Airlangga, 2016.
[18] Pintautami, Jatuwarih, “Pengaruh Suplementasi Zink Terhadap Nafsu Makan pada Anak”, Jurnal Mutiara Medika, vol. 11, no. 3, pp. 144-149, 2011.
[19] Yuanda, B. F., Ilmiawan, M. I., dan Andriani, R., “Hubungan antara Durasi Penggunaan Gawai terhadap Status Gizi Anak Usia Prasekolah Taman Kanak- kanak di Kota Pontianak”, Sari Pediatri, vol. 23, no.5, pp. 318, 2022.
[20] Sapardi, V. S., “Hubungan Bermain Gadget dengan Perkembangan Anak Usia Prasekolah di PAUD/TK Islam Budi Mulia”, Menara Ilmu XII (80), 2018.