Nutra : Jurnal Gizi Dan Kesehatan
https://saintifypublish.com/index.php/nutra
Volume 01 | Nomor 01 | Juli |2023
e-ISSN: xxx dan p-ISSN: xxxx

GADGET USE DURATION AND MACRO NUTRITION INTAKE WITH NUTRITIONAL STATUS ON STUDENTS OF SMPN 16 MAKASSAR

Nurul Asyifah[1*],Aswita Amir[1],Sitti Sahariah Rowa[1],Manjilala[1]
[1]Nutrition Study Program, Polytechnic of Health Kemenkes Makassar, Indonesia
***Corresponding author email address: nurulasyifah@poltekkes-mks.ac.id**

Article History
Received: 27 Juli 2023
Accepted: 30 Juli 2023

Keyword
Gadget
Intake
Nutritional Status

DOI
xxxxxxxx

Abstract
People in urban areas tend to carry out their daily activities with gadgets. excessive use of gadgets in adolescents related to nutritional status, namely high screen-time, low levels of physical activity, and makes eating patterns less suitable so that they can affect nutritional status in the long term. This type of research is observational using a cross sectional study design. The population of class VIII students of SMPN 16 Makassar is 162 people. The sample size is 116 people. The duration of using the gadget was obtained through a questionnaire, the intake of macronutrients was obtained through a 2x24 hour recall and nutritional status was obtained from anthropometric measurements. Statistical test with the Chi Square test using the SPSS program. Data is presented in the form of frequency distribution tables and narratives. The results showed that the duration of using the sample gadgets was 47.4% sufficient and 52.6% more. The sample protein intake was 31.9% sufficient and 68.1% insufficient. The sample fat intake was 44% sufficient and 56% insufficient. The sample carbohydrate intake was 29.3% sufficient and 70.7% insufficient. The nutritional status of the samples was 13.8% over nutrition, 77.6% normal nutrition and 8.6% undernutrition. Statistical test results between the variable duration of gadget use and protein intake, carbohydrate intake and nutritional status showed (P > 0.005) so there was no relationship. Meanwhile, the statistical test results between the variable duration of gadget use and fat intake (P < 0.005) so that there is a relationship between the duration of gadget use and fat intake. It is recommended to maintain a healthy diet and lifestyle, especially reducing the duration of using gadgets and increasing intake of macronutrients in order to achieve adequate consumption levels

Introduction

The issue of nutritional health remains a challenge that has not been fully resolved in society. The efforts to address malnutrition have not been successful and have led to other problems such as an increase in obesity and chronic diseases. The percentage of nutritional

status among children aged 13 to 15 years in Makassar City is as follows: severely underweight 9.48%, underweight 12.66%, normal 70.71%, overweight 25.7%, and very overweight or obese 16.40%. Meanwhile, the overall percentage of nutritional status based on the place of residence in urban areas is severely underweight 4.57%, underweight 10.70%, normal 72.79%, overweight 16.58%, and very overweight or obese 9.34%. In rural areas, the data shows severely underweight 3.32%, underweight 9.94%, normal 80.26%, overweight 10.28%, and very overweight or obese 3.44% (1)

Urban communities tend to engage in daily activities following trends of the time, one of which is the use of gadgets. They spend a significant amount of time each day staring at gadgets, known as screen-time. Studies recommend limiting screen-time to around ≤ 2 hours per day for children and adolescents. However, the reality is different when observing the habits of teenagers. In China, 36.8% of children aged 9-17 years are already active in using electronic media for ≥ 2 hours a day, while in Vietnam, approximately 56%-64% of 13-14-year-olds actively use electronic media for ≥ 2 hours a day. In our country, 60% of school-age children use electronic media for > 2 hours a day (2).

The use of gadget devices is one form of sedentary lifestyle or inactive living. This can lead to increased calorie intake when using gadgets. Research conducted in Brazil on adolescents aged 11-14 years shows a connection between intensive screen use and weight gain and unhealthy eating patterns. In Canada, research on schoolchildren shows that 64% of them have at least one Electronic Entertainment and Communication Device (EECD). The use of EECDs at night is associated with weight gain, decreased food intake quality, and significant reduction in physical activity (2).

With technological advancements, school children have become less interested in playing outdoors. Physical activities such as running, jumping, or other active movements are replaced by more static activities such as electronic games, computers, television, and gadget use (3). An initial study conducted through interviews in December 2018 at SMK Batik 2 Surakarta found that out of 8 students who were subjects of the study, all of them spent more than or equal to 6 hours a day using gadgets. Of these, 4 students stated that they tended to eat at inappropriate times while playing with gadgets, while the other 4 students said they often consumed snacks while playing with gadgets (4).

Materials and Methods

The method used in this research is an observational method, which means that the research variables are measured through observation of the subjects using a questionnaire as the instrument. This study employs a cross-sectional design. The population of this research consists of 8th-grade students from SMPN 16 Makassar, with a sample size of 116. The analysis used in this study is the Chi-Square test with a significance level of α (0.05) or greater.

Nutra : Jurnal Gizi Dan Kesehatan
https://saintifypublish.com/index.php/nutra
Volume 01 | Nomor 01 | Juli |2023
e-ISSN: xxx dan p-ISSN: xxxx

Results

Table 1 shows that the majority of the respondents are males, accounting for 60 respondents (51.7%). Most of the students have a longer duration of gadget use, totaling 61 individuals (52.6%). The distribution of students' intake shows that the majority have poor intake of fat, with 65 respondents (56%), protein intake is insufficient for 79 respondents (68.1%), carbohydrate intake is insufficient for 82 respondents (70.7%), and there are 26 respondents (22.5%) who have abnormal nutritional status.

Table-1. Characteristics of Respondents

Characteristics	n	%
Sex		
male	60	51.7
female	56	48.2
The Use of Gadgets		
Enough	61	47.4
More	55	52.6
Fat intake		
insufficient	65	56
sufficient	51	44
Protein intake		
insufficient	79	68.1
sufficient	37	31.9
Carbohydrate intake		
insufficient	82	70.7
sufficient	34	29.3
Nutritional Status		
Normal	90	77.5
Abnormal	26	22.5
Total	**116**	**100.0**

Table 2 shows that there are 41 respondents (67.2%) with excessive gadget usage duration who have insufficient protein intake, and 20 respondents (32.8%) with excessive gadget usage duration who have sufficient protein intake. This makes a total of 61 respondents with excessive gadget usage duration. On the other hand, among respondents with sufficient gadget usage duration, 38 respondents (69.1%) have insufficient protein intake, and 17 respondents (30.9%) have sufficient protein intake. The Chi-Square test results yield a p-value of 0.828 > 0.05, indicating that there is no significant relationship between gadget usage duration and protein intake among students of SMPN 16 Makassar.

Nutra : Jurnal Gizi Dan Kesehatan
https://saintifypublish.com/index.php/nutra
Volume 01 | Nomor 01 | Juli |2023
e-ISSN: xxx dan p-ISSN: xxxx

Table-2. The Relationship Between Gadget Usage Duration and Protein Intake

Gadget Usage Duration	Protein Intake				Total		p-value
	insufficient		sufficient				
	n	%	n	%	n	%	
Enough	17	30.9	38	69.1	55	100	0.828
More	20	32.8	41	67.2	61	100	

Table 3 shows that there are 36 respondents (59%) with excessive gadget usage duration who have insufficient fat intake, and 25 respondents (41%) with excessive gadget usage duration who have sufficient fat intake. This makes a total of 61 respondents with excessive gadget usage duration. On the other hand, among respondents with sufficient gadget usage duration, 40 respondents (72.7%) have insufficient fat intake, and 15 respondents (27.3%) have sufficient fat intake. The Chi-Square test results yield a p-value of 0.001 < 0.05, indicating that there is significant relationship between gadget usage duration and fat intake among students of SMPN 16 Makassar.

Table-3. The Relationship Between Gadget Usage Duration and Fat Intake

Gadget Usage Duration	Fat Intake				Total		p-value
	insufficient		sufficient				
	n	%	n	%	n	%	
Enough	40	72.7	15	27.3	55	100	0.001
More	25	41	36	59	61	100	

Table 4 shows that there are 39 respondents (63.9%) with excessive gadget usage duration who have insufficient carbohydrate intake, and 22 respondents (36.1%) with excessive gadget usage duration who have sufficient carbohydrate intake. This makes a total of 61 respondents with excessive gadget usage duration. On the other hand, among respondents with sufficient gadget usage duration, 43 respondents (78.2%) have insufficient carbohydrate intake, and 12 respondents (21.8%) have sufficient carbohydrate intake. The Chi-Square test results yield a p-value of 0.139 > 0.05, indicating that there is no significant relationship between gadget usage duration and carbohydrate intake among students of SMPN 16 Makassar.

Table-4. The Relationship Between Gadget Usage Duration and Carbohydrate Intake

Gadget Usage Duration	Fat Intake				Total		p-value
	insufficient		sufficient				
	n	%	n	%	n	%	
Enough	43	78.2	12	21.8	55	100	0.139
More	39	63.9	22	36.1	61	100	

Table 5 shows that there are 47 respondents (77%) with excessive gadget usage duration who have normal nutritional status, and 14 respondents (23%) with excessive

gadget usage duration who have abnormal nutritional status. This makes a total of 61 respondents with excessive gadget usage duration. On the other hand, among respondents with sufficient gadget usage duration, 43 respondents (78.2%) have normal nutritional status, and 12 respondents (21.8%) have abnormal nutritional status. The Chi-Square test results yield a p-value of 0.884 > 0.05, indicating that there is no significant relationship between gadget usage duration and nutritional status among students of SMPN 16 Makassar.

Table-5. The Relationship Between Gadget Usage Duration and Nutritional Status

Gadget Usage Duration	Nutritional Status				Total		p-value
	Abnormal		Normal				
	n	%	n	%	n	%	
Enough	12	21,8	43	78,2	55	100	0.884
More	14	23	47	77	61	100	

DISCUSSION

The Relationship Between Gadget Usage Duration and Protein Intake

Based on the results of the Chi-Square Test, the obtained significance value is 0.828, which is greater than the value of α (0.05), indicating that there is no relationship between gadget usage duration and protein intake. This research aligns with (5), which explains that the research results show that the variable of intake has no relationship with the variable of electronic device (gadget) usage duration. Students with excessive gadget usage duration may not necessarily have excessive or insufficient protein intake, and the same goes for students who use gadgets for a sufficient duration. Therefore, gadget usage duration is not a determinant of the amount of intake in students at SMPN 16 Makassar.

The Relationship Between Gadget Usage Duration and Fat Intake

Based on the results of the Chi-Square Test, the obtained significance value is 0.001, which is smaller than the value of α (0.05), indicating that there is a relationship between gadget usage duration and protein intake. This finding is consistent with a previous study conducted in Pekanbaru, which concluded that there is a significant relationship between media factors and adolescent eating behavior (2). This research shows a connection because respondents with high gadget usage duration in this study tend to have sufficient fat intake (≥80-110%), while respondents with sufficient gadget usage duration have insufficient fat intake (<80%). This finding is consistent with a previous study conducted by Andriani (2021), which stated that prolonged screen exposure leads to a decrease in physical activity and an increase in fat and carbohydrate consumption. Therefore, habits involving excessive screen use can contribute to an increase in Body Mass Index (BMI), especially in adolescents.

Spending excessive time in front of screens in a day is associated with a higher likelihood of snacking and almost twice the likelihood of becoming overweight.

The Relationship Between Gadget Usage Duration and Carbohydrate Intake

Based on the results of the Chi-Square Test, the obtained significance value is 0.139, which is greater than the value of α (0.05), indicating that there is no relationship between gadget usage duration and protein intake. This finding supports the previous findings reported by (6), which showed that in that study, the conclusion was that there is no relationship between screentime and nutrient intake with body mass index. Students with excessive gadget usage duration may not necessarily have excessive or insufficient carbohydrate intake, and the same goes for students who use gadgets for a sufficient duration. Therefore, gadget usage duration is not a determinant of the amount of intake in students at SMPN 16 Makassar.

The Relationship Between Gadget Usage Duration and Nutritional Status

Based on the results of the Chi-Square Test, the obtained significance value is 0.884, which is greater than the value of α (0.05), indicating that there is no relationship between gadget usage duration and protein intake. Another study conducted by (7), explains that there is no direct relationship between screen-time and nutritional status because there are other more complex factors that can influence it. These factors are the reasons why there is no correlation between screen-time and nutritional status. The duration of gadget usage is not a determining factor in determining the nutritional status of students at SMPN 16 Makassar because students have the choice to eat or not eat while playing or not playing with gadgets.

Conclusion

There is no relationship between gadget usage duration and protein and carbohydrate intake among 7th-grade students at SMPN 16 Makassar, and there is no relationship between gadget usage duration and nutritional status among 7th-grade students at SMPN 16 Makassar. However, there is a relationship between gadget usage duration and fat intake among 7th-grade students at SMPN 16 Makassar.

Reference

1. Riskesdas 2018: Laporan Provinsi Sulawesi Selatan. Lemb Penerbit Badan Kebijak Pembang Kesehat [Internet]. 2020 Aug 13 [cited 2023 Jul 25]; Available from: http://ejournal2.litbang.kemkes.go.id/index.php/lpb/article/view/3658

2. Kumala AM, Margawati A, Rahadiyanti A. Hubungan Antara Durasi Penggunaan Alat Elektronik (Gadget), Aktivitas Fisik Dan Pola Makan Dengan Status Gizi Pada Remaja Usia 13-15 Tahun. J Nutr Coll. 2019 May 14;8(2):73–80.
3. Mifta Ayu Firmanda, Mila Kristiani, Fida. (2021). Hubungan Intensitas Penggunaan Gadget terhadap Status Gizi pada Siswa SMK Batik 2 Surakarta
4. Aprilia N. Hubungan Durasi Penggunaan Alat Elektronik (Gadget), Aktivitas Fisik Dan Pola Makan Terhadap Kualitas Tidur Pada Mahasiswa Unsri Indralaya Selama Pandemi Covid-19. 2021;
5. Haryanti RT, Susilowati T, Sari IM. Hubungan Intensitas Penggunaan Gadget terhadap Status Gizi pada Siswa SMK Batik 2 Surakarta. ASJN Aisyiyah Surak J Nurs. 2022 Jul 31;3(1):27–33.
6. Hardiansah Y, Alfian N, Sarwadi S, Amrullah M. Gambaran Dukungan Keluarga Terhadap Anak Retardasi Mental Di SLB Praya. J Kesehat Qamarul Huda. 2020 Jun 30;8(1):54–62.