J-Kesmas: Jurnal Fakultas Kesehatan Masyarakat
(The Indonesian Journal of Public Health)
Available at http://jurnal.utu.ac.id/jkesmas

p-ISSN: 2355-0643, e-ISSN: 2355-0988
Vol. 9, No. 2, October, 2022
Open Access RESEARCH ARTICLE

Use of Gadgets with Screen Time on Emotional Intelligence in The Digital Era in Middle Adolescence (15-18 Years)

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Submitted:29/08/2022 **Revised:** 06/09/2022 **Accepted:** 28/09/2022 **Published online**: 31/10/2022

doi: https://doi.org/10.35308/j-kesmas.v7i2.6028 **How to cite this article**: Marchamah, DNS., Sudrajat, A., Rahmatika, DN. (2022). Use of Gadgets with Screen Time on Emotional Intelligence in the Digital Era in Middle Adolescence (15-18 Years). *J-Kesmas: Jurnal Fakultas Kesehatan Masyarakat (The Indonesian Journal of Public Health)*. 9(2): 56-62.

Abstract

Gadget addiction causes various personality disorders. This study is to determine whether the use of gadgets with screen time has an effect on emotional intelligence. This research uses the cross-sectional method. The research variables are gadgets as an independent variable, screen time as an intervening variable, and emotional intelligence as a determining variable. The population of adolescents is the middle adolescence (15-18 years) SMA X Semarang City as many as 252 people. Using a minimum sample of 100 people, with a cluster random sampling technique. Data analysis using Path Analysis. Validity test with a 5% confidence level of 0.374. The calculated r-value > r-table. The reliability test used Cronbach Alpha with the results of the reliability value > 0.7. Research results: (1) The significance value of 0.751 > 0.05 means that the use of gadgets does not affect screen time. (2) The significance value of 0.025 < 0.05 means that the use of gadgets affects emotional intelligence. (3) The significance value of 0.722 > 0.05 means that the use of screen time does not affect emotional intelligence. (4) The direct effect of using gadgets on emotional intelligence is explained by a beta value of 0.228. (5) The indirect effect between gadget use and screen time as an intervening variable is (-0.032 x 0.035 = (-0.00112), so 0.228 > (-0.00112), meaning that screen time is not an intervening variable between gadgets and emotional intelligence. The better a person's emotional intelligence, the better it will be accepted by the community.

Keywords: Digital era; Emotional intelligence; Gadgets; Middle adolescence; Screen time

Introduction

The use of Information and Communication Technology (ICT) in Indonesia in the last five years (2016-2020) has shown rapid development. This can be seen in household internet use reaching 78.18%, followed by population growth using cellular phones in 2020 reaching 62.84%. In 2020, household computer ownership increased to 18.83%. The percentage of the population who accessed the internet in 2016 was around 25.37% to 53.73% in 2020 (Badan Pusat Statistik, 2020). A study funded by UNICEF and carried out by the Ministry of Communication and Information (Kemkominfo) found that 98% of adolescents know about the internet and 79.5% of them are internet users. Changes in the media structure in Indonesia, especially with the increasing use of mobile phones, have changed the access and use of internet digital media among adolescence who tend to use personal computers to access the internet in internet cafes and school computer laboratories, laptops at home and smartphones during daily activities (Berita Kominfo, 2014).

During adolescence, what is called a growth spurt or rapid growth and puberty. In this phase, there is physical growth accompanied by mental-cognitive development, psychological and reproductive growth, and development processes that regulate the function of sexuality. Physical growth in adolescents is not always accompanied by the maturity of thinking and emotional abilities (Kementerian Kesehatan Republik Indonesia, 2017). Living in the digital era with the rapid development of technology makes it easier for adolescence to use it. However, it should be noted that the use of gadgets at every age has differences related to the intensity of time or screen time. Currently, we are not only focused on discussing intellectual intelligence but also discussing another type of intelligence, namely emotional intelligence (EQ). That someone who has a high IQ is not enough, they must also be able to control their emotions well (Feby, 2021).

The Emotional Competency Inventory (ECI) is used primarily to measure emotional intelligence in industries and organizations. This is evidenced by previous research showing that ECI is associated with

outcomes such as one's life success, departmental performance, perceived leadership in the group, sales performance, firefighting performance, satisfaction, and others (Wolff et al., 2013). The results of other studies show that the coefficient of determination indicated by R-square on the variable of intention to use gadgets on adolescent emotional intelligence is 0.233. This figure implies that the intention to use gadgets in this study provides an effective contribution of 23.3% to the emotional intelligence variable (Ratri Desiningrum et al., 2017).

Based on the description above, the researcher intends to find out the analysis of the use of gadgets with screen time on emotional intelligence in the digital era in middle adolescents (15-18 years) in SMA X Semarang City which needs to be anticipated as early as possible through early detection of emotional intelligence development using the Emotional Competency Inventory (ECI). Through the Penelitian Dosen Pemula (PDP) scheme, it is hoped that it can identify and anticipate the phenomenon of emotional intelligence development problems that may occur in the future so that mitigation and solutions can be carried out earlier.

Methods

The research design used is quantitative using the cross-sectional method. The variables of this research are gadgets as the independent variable, screen time as the intervening variable, and emotional intelligence as the dependent variable. The population in this study was middle adolescents (15-18 years) in SMA X Semarang City as many as 252 people. Sampling was carried out using a minimum sample of 100 middle adolescents (15-18 years) at SMA X Semarang City. The sample was selected using a cluster random sampling technique, which is to randomize the group, not the subject individually and each member of the population has the same opportunity to be taken as a sample (Azwar, 2014).

The data collection method in this study was using a questionnaire as a data collection tool. The Emotional Competency Inventory (ECI) is an instrument to measure emotional intelligence. The Emotional Competency Inventory (ECI) measures 18 emotional competencies covering four clusters, namely self-awareness, self-management, social awareness, and relationship management (Wolff et al., 2013). The type of scale used is a Likert scale and data analysis using Path Analysis. Test the validity using SPSS by testing the results of respondent data and a 5% confidence level of 0.374. The result is that if the calculated r-value > r-table, then the question is valid. In the reliability test, each variable was measured using Cronbach Alpha with the result that the reliability value was > 0.7. So that the questionnaire is declared reliable or trustworthy.

The research subjects were given an approval sheet to know the aims and objectives of the research. Research subjects who are willing to become respondents are asked to sign a consent form. Meanwhile, subjects who refuse to become respondents still have their rights respected and researchers do not use coercion. The information obtained from respondents is guaranteed to be confidential by the researcher and is only used for research purposes. All respondents in this study will have equal rights and be treated fairly. Researchers try to maximize the benefits that will be obtained from this research and minimize the losses that will be caused.

Results

Gadget

Table 1. Gadget Frequency Distribution

Gadget	Frequency	Percentage (%)
Strongly disagree	0	0
Disagree	0	0
Doubtful	0	0
Agree	49	49
Strongly agree	51	51
Total	100	100

Source: *Primary Data, 2022*

Based on the table above, no adolescents strongly disagree with using gadgets. There are no adolescents who disagree to use gadgets. There are no adolescents who are doubtful to use gadgets. Adolescents who agree to use gadgets are 49 people (49%). And adolescents who strongly agree to use gadgets are 51 people (51%). The types of gadgets used are cellphones or smartphones, laptops, notebooks or computers, tablets, digital cameras, headsets, or headphones. The benefits of using gadgets are that it supports highly effective learning, build creativity, sources of information, communication tools, distance learning, and social networks.

Screen Time

Table 2. Screen Time Frequency Distribution

Screen Time	Frequency	Percentage (%)
Strongly disagree	0	0
Disagree	1	1
Doubtful	63	63
Agree	34	34
Strongly agree	2	2
Total	100	100

Source: *Primary Data, 2022*

Based on the table above, no adolescents strongly disagree with using screen time. Adolescents who disagree to use screen time are 1 person (1%).

Adolescents who are doubtful to use screen time are 63 people (63%). Adolescents who agree to use screen time are 34 people (34%). Adolescents who strongly agree to use screen time are 2 people (2%). The time limit for using baby gadgets is 30 minutes every day. For the pre-school age, the maximum time limit for using gadgets every day is 40 minutes. The ideal age for using a gadget is 1 hour every day at the elementary school level. At the junior high school level, the minimum time limit for using gadgets is 2 hours every day. High school age limit time for using gadgets is 2 hours every day. The consequences of not using screen time are nearsightedness or minus eyes, increased glasses size (for people with a minus), eye fatigue (watery eyes, looks redder, often rubbed, blinks, or dizziness), lack of social contact with friends, behavioral changes and stress.

Emotional Intelligence

Table 3. Emotional Intelligence Frequency Distribution

Emotional Intelligence	**Frequency**	**Percentage (%)**
Low	0	0
Quite low	0	0
Normal	4	4
High enough	75	75
High	21	21
Total	100	100

Source: *Primary Data, 2022*

Based on the table above, no adolescents have low emotional intelligence. There are no adolescents who have quite low emotional intelligence. Adolescents who have normal emotional intelligence are 4 people (4%). Adolescents who have high enough emotional intelligence are 75 people (75%). Adolescents who have high emotional intelligence are 21 people (21%). Emotional intelligence consists of emotional awareness, accurate self-assessment, self–confidence, emotional self-control, transparency, adaptability, achievement, initiative, optimism, empathy, organizational awareness, service orientation, development of others, inspirational leadership, change catalyst, influence, conflict management, teamwork, and collaboration.

Gadgets against Screen Time

Table 4. Gadgets against Screen Time Frequency Distribution

Gadget	**Screen Time**												Sig value	Beta value
	Strongly disagree		Disagree		Doubtful		Agree		Strongly agree		Total			
	N	%	N	%	N	%	N	%	N	%	N	%		
Strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0		
Disagree	0	0	0	0	0	0	0	0	0	0	0	0		
Doubtful	0	0	0	0	0	0	0	0	0	0	0	0		
Agree	0	0	0	0	30	30	19	19	0	0	49	49	0.751	-0.032
Strongly agree	0	0	1	1	33	33	15	15	2	2	51	51		
Total	0	0	1	1	63	63	34	34	2	2	100	100		

Source: *Primary Data, 2022*

Based on the table above, 1 adolescent strongly agrees to use gadgets without screen time (1%). Adolescents who agree to use gadgets with screen time in doubt are 30 people (30%). Adolescents who strongly agree to use gadgets with screen time in doubt are 33 people (33%). Adolescents who agree to use gadgets with screen time are 19 people (19%). Adolescents who strongly agree to use gadgets with screen time agree among as many as 15 people (15%). Adolescents who strongly agree to use gadgets with screen time are 2 people (2%). A significance value of 0.751 > 0.05 means that there is no significant effect. So that the use of gadgets has no effect on screen time in the digital era in middle adolescents (15-18 years).

Gadgets against Emotional Intelligence

Table 5. Gadgets against Emotional Intelligence Frequency Distribution

Gadget	**Emotional Intelligence**												Sig value	Beta value
	Low		Quite low		Normal		High enough		High		Total			
	N	%	N	%	N	%	N	%	N	%	N	%		
Strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0		
Disagree	0	0	0	0	0	0	0	0	0	0	0	0		
Doubtful	0	0	0	0	0	0	0	0	0	0	0	0		
Agree	0	0	0	0	2	2	42	42	5	5	49	49	0.025	0.228

Strongly agree	0	0	0	0	2	2	33	33	16	16	51	51
Total	0	0	0	0	4	4	75	75	21	21	100	100

Source: *Primary Data, 2022*

Based on the table above, it can be seen that 2 adolescents agree to use gadgets with normal emotional intelligence (2%). And 2 adolescents strongly agreed to use gadgets with normal emotional intelligence (2%). Adolescents who agree to use gadgets with high enough emotional intelligence are 42 people (42%). Adolescents who strongly agree to use gadgets with high enough emotional intelligence are 33 people (33%). Adolescents who agree to use gadgets with high emotional intelligence are 5 people (5%). Adolescents who strongly agree to use gadgets with high emotional intelligence are 16 people (16%). A significance value of 0.025 < 0.05 means that there is a significant effect. So that the use of gadgets has an effect on emotional intelligence in the digital era in middle adolescents (15-18 years).

Screen Time against Emotional Intelligence

Table 6. Screen Time against Emotional Intelligence Frequency Distribution

Screen Time	**Emotional Intelligence**												Sig value	Beta value
	Low		Quite low		Normal		High enough		High		Total			
	N	%	N	%	N	%	N	%	N	%	N	%		
Strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0		
Disagree	0	0	0	0	0	0	1	1	0	0	1	1		
Doubtful	0	0	0	0	3	3	46	46	14	14	63	63		
Agree	0	0	0	0	1	1	27	27	6	6	34	34	0.722	0.035
Strongly agree	0	0	0	0	0	0	1	1	1	1	2	2		
Total	0	0	0	0	4	4	75	75	21	21	100	100		

Source: *Primary Data, 2022*

Based on the table above, 3 adolescents are doubtful to use screen time with normal emotional intelligence (3%). Adolescents who agree to use screen time with normal emotional intelligence are 1 person (1%). Adolescents who disagree to use screen time with high enough emotional intelligence are 1 people (1%). Adolescents who are doubtful to use screen time with high enough emotional intelligence are 46 people (46%). Adolescents who agree to use screen time with high enough emotional intelligence are 27 people (27%). Adolescents who strongly agree to use screen time with high enough emotional intelligence are 1 person (1%). Adolescents who are doubtful to use screen time with high emotional intelligence are 14 people (14%). Adolescents who agree to use screen time with high emotional intelligence are 6 people (6%). Adolescents who strongly agree to use screen time with high emotional intelligence are 1 person (1%). A significance value of 0.722 > 0.05 means that there is no significant effect. So that the use of screen time has no effect on emotional intelligence in the digital era in middle adolescents (15-18 years).

Discussion

Gadget

Adolescents who strongly agree to use gadgets are 51 people (51%). The results of other studies show that a high degree of dependence is present with gadget addiction. Health actions that will be taken in the form of counseling about the pros and cons at an early stage can prevent complications in the future (Kumar & Sherkhane, 2018). The development of the digital technology era among adolescents is a big challenge and more attention for parents, teachers, and the government in assisting them, especially adolescents (Zakiyuddin et al., 2020).

Screen Time

Adolescents who are doubtful to use screen time are 63 people (63%). The results of other studies show that changes in screen time suddenly increase across different population groups (Sultana et al., 2021). There is a need to educate the public about limiting overall screen exposure and ergonomic screen display methods. Efforts from policymakers to reduce the duration of online classes for students and online working hours for professionals are needed to control this eye strain epidemic (Ganne et al., 2021).

Emotional Intelligence

Adolescents who have high enough emotional intelligence are 75 people (75%). The results of other studies indicate that the role of parents in maintaining emotional intelligence in children by identifying the child's personality traits that involve interpersonal skills and intrapersonal skills through effective parental support which includes affection, non-judgmental acceptance, and responsive listening which are qualities that must have in heredity (Nisha & Alice Sophia,

2017). Through emotional intelligence training, adolescents will learn how to control their emotions so that when they face problems, they can use appropriate conflict management to solve the problem (Gandhi et al., 2021).

Gadgets against Screen Time

Adolescents who strongly agree to use gadgets with screen time in doubt are 33 people (33%). A significance value of 0.751 > 0.05 means that there is no significant effect. So that the use of gadgets has no effect on screen time in the digital era in middle adolescents (15-18 years). The results of another study found that dependence on gadgets in children was caused by the long duration of using gadgets. Playing with gadgets for a long enough duration and done every day, can make children develop antisocial personalities (Sianturi, 2021). People who are constantly exposed to gadget screens are faced with various health problems which later turn into bigger physical and psychological problems that increase the burden of disease (Fatima et al., 2021). People are more prone to using cell phones per day than other electronic gadgets. People who use smartphones for a long time are exposed to eye damage. Exposure to blue light can cause macular degeneration and the point at which the eye cannot see true colors properly. This condition can be treated and prevented with regular screen breaks and exercise. The public is advised to wear protective glasses, reduce the brightness of electronic devices, and avoid small-screen phones (Aparna et al., 2019).

Gadget against Emotional Intelligence

Adolescents who agree to use gadgets with high enough emotional intelligence are 42 people (42%). A significance value of 0.025 < 0.05 means that there is a significant effect. So that the use of gadgets has an effect on emotional intelligence in the digital era in middle adolescents (15-18 years). This is supported by the results of a similar study which shows that there is a relationship between the level of gadget addiction and emotional intelligence (Damanik et al., 2019). The lower the gadget addiction, the higher the level of emotional intelligence, and vice versa (Alrasheed & Aprianti, 2018). The need to study the literature and make a list of problems that arise due to prolonged use of gadgets, and ways to minimize symptoms due to increased screen time. The use of gadgets for a long time can hurt the human body. There is a critical need to promote healthy smartphone use, as well as the importance of friendship and family connectedness as a way to promote psychological well-being. The younger generation needs to be adequately educated about ergonomic practices and the health and safety of using gadgets (Sarla, 2020).

Screen Time against Emotional Intelligence

Adolescents who are doubtful to use screen time with high enough emotional intelligence are 46 people (46%). A significance value of 0.722 > 0.05 means that there is no significant effect. So that the use of screen time has no effect on emotional intelligence in the digital era in middle adolescents (15-18 years). The results of other studies suggest that it is necessary to review available guidelines and incorporate evidence-based interventions to prevent unhealthy screen time among affected individuals. Such interventions could address harmful behaviors associated with screen time and promote an active lifestyle that could improve health across populations during and after this pandemic (Ozturk Eyimaya & Yalçin Irmak, 2021). Potential harmful effects of extensive screen time and technology use include symptoms of increased attention deficit, impaired emotional and social intelligence, technology addiction, social isolation, impaired brain development, and sleep disturbances (Small et al., 2020). There are indications that screen time is associated with anxiety symptoms in adolescents, but from a longitudinal perspective, the magnitude, specificity, and temporal priority of this relationship have been relatively under-explored. To address this gap, we annually survey youth for four years to assess their use of different types of screen time per day and symptoms of anxiety (Boers et al., 2020).

Conclusion

The results showed that: (1) Adolescents who strongly agree to use gadgets are 51 people (51%). (2) Adolescents who are doubtful to use screen time are 63 people (63%). (3) Adolescents who have high enough emotional intelligence are 75 people (75%). (4) Adolescents who strongly agree to use gadgets with screen time in doubt are 33 people (33%). A significance value of 0.751 > 0.05 means that there is no significant effect. So that the use of gadgets has no effect on screen time in the digital era in middle adolescents (15-18 years. (5) Adolescents who agree to use gadgets with high enough emotional intelligence are 42 people (42%). A significance value of 0.025 <0.05 means that there is a significant effect. So that the use of gadgets has an effect on emotional intelligence in the digital era in middle adolescents (15-18 years). (6) Adolescents who are doubtful to use screen time with high enough emotional intelligence are 46 people (46%). A significance value of 0.722 > 0.05 means that there is no significant effect. So that the use of screen time has no effect on emotional intelligence in the digital era in middle adolescents (15-18 years). (7) The direct effect of using gadgets on emotional intelligence

in the digital era in middle adolescents (15-18 years) is explained by a beta value of 0.228. (8) The indirect effect between gadget use and screen time in the digital era in middle adolescents (15-18 years) as an intervening variable is (-0.032 x 0.035 = (-0.00112). So 0.228 > (-0.00112), meaning screen time is not an intervening variable between gadgets and emotional intelligence.

Acknowledgment

Our gratitude goes to: (1) Direktorat Riset, Teknologi, dan Pengabdian Kepada Masyarakat as the funder. (2) SMA Muhammadiyah 1 Semarang which has become the research location.

Author Contribution and Competing Interest

The author's contributors to this research are interested in collecting data using a questionnaire, analyzing the results, and compiling the script.

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