

CORRELATION ANALYSIS OF GADGET USE WITH CHANGES IN TEENAGERS BEHAVIOR

Titik Sumiatin^{1*}, Wahyu Tri Ningsih¹, Julia Novita Putri¹

¹Poltekkes Kemenkes Surabaya, Surabaya, Indonesia

*Corresponding author: titik-tbn@poltekkes-surabaya.ac.id

ABSTRACT

Background: The use of gadgets among Indonesian teenagers has rapidly increased with the development of global information technology. Although it is a matter of pride, the negative impacts of gadget use are starting to be felt, especially by parents who have difficulty controlling their children. Therefore, this study aims to determine the relationship between gadget use and changes in adolescent behavior.

Methods: This study used a cross-sectional design. The sampling technique used was quota sampling on 186 adolescents. Gadget addiction was measured using the Smartphone Addiction Index—Short Version (SAS-SV) questionnaire, and Behavior in this study was calculated using the Strengths and Difficulties Questionnaire (SDQ). Data were analyzed using chi-square.

Results: The study showed that almost all teenagers (97%) were in the medium and high category of gadget users and experienced negative behavioral changes. Based on the results of the analysis test, there was a significant relationship between gadget use and behavioral changes in teenagers ($p = 0.001$)

Conclusion: Gadget addiction in adolescents is related to behavioral changes in adolescents.

Keywords: Teenagers, gadge adictiont, behaviour change

INTRODUCTION

Indonesia is currently one of the countries with the highest gadget users in the world. Indonesians spent an average of 5.4 hours per day playing gadgets in 2021, increased to 5.7 hours per day in 2022 (CNBC.ai, 2023). Total of 2,933 teenagers experienced an increase in online duration from 7.27 hours to 11.6 hours per day (Kristana, 2021).

According to the Indonesian Internet Service Providers Association in 2022–2023, the number of internet users in Indonesia increased from 210.03 million to 215.63 million, or an increase of around 1.17%. Based on the provincial area in Indonesia, East Java is in fifth place with a percentage of internet service users of 81.26% (APJJI, 2023). KOMINFO data also states that based on age, children who are vulnerable to gadget addiction

are in the 13-18 year age range (KOMINFO, 2018).

Whether we realize it or not, the development of gadget technology has brought both positive and negative impacts. Almost all over the world, the use of gadgets has affected all aspects of human life, such as physical/health, psychological, academic, social, spiritual, and economic relationships and behavior. Uncontrolled and uncontrolled use of gadgets mostly leads to addiction. Various research results have revealed a lot of data about this. Among them, addiction to online games causes teenagers health to decline. Teenagers who are addicted to online games have weak immune systems due to a lack of physical activity, lack of sleep, and often eating late (Männikkö, Billieux, & Kääriäinen, 2015).

Psychological aspects, the many online game scenes that show criminal and violent acts, such as fighting, vandalism, and murder,

can indirectly affect the subconscious of teenagers that real life is the same as in the online game. The characteristics of teenagers who experience mental disorders are due to the influence of online games, for example, easy to get angry, become emotional, and easily say bad words (Patra and Barida, 2021).

Academic aspect, teenagers are of school age and have a role as students at school. Addiction to online games can reduce academic achievement, (Kim and Lee, 2022) (Lim et al., 2015). Free time that should be used to study lessons at school is used more often to complete missions in online games. Teenagers' concentration is generally disturbed so their ability to absorb lessons delivered by teachers is also not optimal.

Social aspect, some teenagers with gaming addiction feel they find their identity when they play online games through emotional attachment in the formation of avatars, which causes them to be immersed in a fantasy world they create themselves. This can make them lose touch with the real world, which can lead to reduced interaction (Marcovitz, 2012). Although it was found that there was an increase in online socialization, at the same time, there was also a decrease in real-life socialization (Li et al., 2020; Patra and Barida, 2021). The characteristics of teenagers who are addicted to online games include antisocial attitudes and no desire to mingle with society, family, and friends (Patra and Barida, 2021). Spiritual aspect, children with gadget addiction will spend most of their time playing with gadgets, so they forget to eat, sleep, bathe, and pray (Wardhani, 2018).

Based on the results of an initial survey at a school in Tuban, it was shown that several students behaved in a solitary manner, did not like to socialize, and lacked concentration in studying due to excessive use of gadgets. Factors affecting teenagers behavior due to gadgets are internal, external, social, and situational factors. Using too many electronic devices in teenagers can have a negative impact

because it can reduce their ability to concentrate and increase their dependence on things they have to do themselves (Gabriela & Mau, 2021).

As a result of gadget addiction, teenagers behave individually, prioritizing using the technology in their hands rather than greeting people around them (Marpaung, 2018). Many children who are addicted to gadgets have to be taken to psychologists, psychiatrists, and special rehabilitation centers because their minds and souls are disturbed (KPAI, 2018). Playing with gadgets can cause children to become antisocial individuals. Interaction time directly is reduced because time is taken up to enjoy everything in solitude. Gadgets can also affect children's behavior (Adelia et al., 2021). Playing with gadgets can cause children to become antisocial individuals. Teenagers' time to interact directly with friends is reduced because most of their time is spent enjoying everything alone. Gadgets can also affect children's behavior (Adelia et al., 2021).

Some ways to overcome teenage gadget addiction, according to Yumarni (2022), are: (1) Spend More Time with Friends. Parents can arrange vacations with their children or get together on weekends. If alone, teenagers will always play with gadgets. When teenagers gather with friends, advise them not to take out their gadgets. Use the time together to chat and joke around; 2) Turn off gadgets before going to bed. The next step in overcoming addiction to electronic devices is to turn off devices 30 to 60 minutes before going to bed. At first, this method may seem difficult. However, if parents do it regularly, teenagers will become accustomed to that behavior. In addition, it speeds up the sleep of teenagers and makes sleep deeper, so they wake up with a fresher mind, body, and eyes; (3) Delete Apps that Cause Addiction. Everyone must have several apps that are frequently used. These apps can cause addiction. By deleting the app, teens can take a break from gadgets and do not need to open the device to check the app. Teens can

read books as a way to fill their free time instead of playing with electronic devices; (4) Knowing the impact of gadget addiction.

METHODS

This study used a correlational analytic design with a cross-sectional approach to analyze the relationship between gadget use and changes in teenagers behavior. The population in this study was 349 teenagers. Sampling was done using the Quota sampling technique. So a sample of 186 teenagers was obtained. The inclusion criteria in this study were teenagers aged 15-18 years teenagers who were not willing to be respondents were exclusion criteria.

Gadget usage was measured using the Smartphone Addiction Index – Short Version (SAS-SV) questionnaire. This questionnaire contains a series of questions that are structured and unstructured (Lubis, 2018). The gadget usage questionnaire contains 10 statements about difficulty in scheduling, difficulty concentrating, wrist or neck pain, restlessness if there is no gadget, dependence on gadgets, and using gadgets for too long. The results of the gadget usage questionnaire will be categorized into low (10-16), medium (17-23), and high (24-30).

Behavior in this study was measured using the Strengths and Difficulties Questionnaire (SDQ), a short behavioral screening instrument designed to provide a profile of the behavior, emotions, and social relationships of children and teenagers. SDQ screening is a tool developed by Robert Goodman in 1997 SDQ. This tool provides a wealth of information and is useful for providing a brief overview of children's and teenagers' behavior, focusing on their strengths and difficulties. The teenagers behavior change questionnaire contains 13 statements about being self-absorbed, paying attention to the environment, liking to play pranks on friends,

walking with one's head bowed, greeting others, playing with gadgets when gathering, solving problems emotionally, solving problems by discussing, playing with gadgets before going to bed, and using time as well as possible. Researchers divide the categories of levels of change in teenagers behavior into two, namely the positive category with a value range of ≤ 23 and the negative category with a range of ≤ 39 . This study used the Indonesian version of the questionnaire. The researcher also identified the characteristics of the respondents, including age and gender. Data was collected online using a Google form distributed via WhatsApp. Guidance and counseling teachers helped distribute questionnaires to students. This questionnaire was preceded by informed consent; respondents who agree to the informed consent can continue to fill out the research questionnaire.

Data analysis using the Chi-Square Test to analyze the relationship between gadget use and behavioral changes in teenagers. All data were analyzed using IBM SPSS 25. This study has obtained ethical approval from the Research Ethics Committee of the Surabaya Ministry of Health Polytechnic with reference number No.EA/ 2524 /KEPK-Poltekkes_Sby/V/2024.

RESULTS AND DISCUSSION

As presented in Table 1, the majority of teenagers, based on age characteristics, are 16 years old (71%), and based on gender characteristics, the majority of teenagers are female, as many as 113 teenagers (61%).

Table 1. Distribution of Respondent Characteristics

Respondent characteristics	f (n=186)	%
Age		
15 years	20	11
16 years	132	71
17 years	31	17
18 years	3	1
Gender		
Male	73	39
Female	113	61

Table 2 shows that almost all teenagers are gadget users with medium and high frequency, namely 181 teenagers (97%).

Table 2. Categories of gadget use among teenagers

Use of Gadgets	f (n=186)	%
Low	5	3
Medium	87	47
High	94	50

Based on Table 3, it is known that almost all teenagers experience behavioral changes that tend to be negative (97%).

Table 3. Behavioral Changes in Teenage Gadget Users

Behavior Change	f (n=186)	%
Positive	6	3 %
Negative	180	97 %

Bivariate analysis reported a relationship between gadgets and behavioral changes. ($p=0.001$: CI : 95%).

According to several previous related studies, the results are mixed. Such as the high use of gadgets among teenagers due to technological developments, requiring teenagers to use gadgets every day. Based on Jarmi's research results, out of 92 people, 50 people were included in the high gadget usage category (Jarmi, 2017). Teenagers feel anxious, annoyed, and angry if they are kept away from gadgets, indicating that teenagers use gadgets excessively (Fitriana, 2020). Subagio and Hidayati's (2017) research found that teenagers who use gadgets excessively find it hard to pay attention and do assignments because they cannot separate the function of gadgets as a tool for playing or learning. According to Yanti's research (2021), it shows that of the 86 respondents, the majority, namely 77 people, were teenagers with risky gadget use; respondents used gadgets to play online games, listen to music, or watch YouTube. Research (Mukti and Nurchayati, 2019) (Cha and Seo, 2018) found a tendency towards excessive use of gadgets in teenagers students use gadgets to play games, surf the internet, and play on social media.

This study found that most teenagers fall into the category of high gadget use, including those who find it difficult to

concentrate when studying and are more individuals. Many of them, use the weekend to play with gadgets rather than play with peers just playing ball on the field. When teenagers are too busy playing with gadgets, teenagers can ignore and not care about the surrounding environment. So, they do not understand the ethics of socializing with people around them. In addition, age can also affect the use of gadgets. Teenagers in this study were between 15-18 years old, the age they grew up in the era of technology and were accustomed to using gadgets from a young age. They use gadgets to communicate, access information, and for entertainment.

This study found that the behavior of teenagers almost entirely tends to be negative. Most teenagers answered that they were more interested in playing with gadgets, were not interested in their surroundings, did not greet people when they met older people, were more focused on gadgets when walking, remained focused on gadgets even when they were hanging out with friends, tended to be emotional when solving problems, and were always with gadgets before going to bed at night.

According to Yanti (2021), out of 86 respondents, more than half, namely 50 teenagers respondents, were teenagers who experienced behavioral changes. Teenagers become more solitary, antisocial, and socially deviant. Indrayani's research (2021) found that teenagers no longer have morals and ethics, so teenagers now have no respect and courtesy toward their parents. According to Asroni & Ajhuri (2022), teenagers become indifferent to their surroundings and prefer to be alone. Teenagers cannot control their emotions and tend to solve problems emotionally. According to research by Syahputri & Ahmad (2022), today's teenagers tend to have a less cooperative attitude, a lack of empathy in teenagers, a lack of friendliness, and an attitude of selfishness toward others around them. Putri's research (2021) from the results of her research shows

that teenagers become withdrawn individuals, have sleep disorders, like to be alone, violent behavior, fade creativity, and the threat of cyberbullying.

The results of this study found that there was a relationship between gadget use and changes in teenagers behavior. According to Yanti's research(2021), there is a significant relationship between gadget use and changes in teenagers behavior, characterized by lack of concentration while studying, using gadgets to cheat or cheat on exams, having difficulty doing homework because they are busy playing with gadgets, teenagers forget to sleep and stay up late. Indrayani's research (2021) shows that gadgets hurt teenagers behavior, namely free association and criminal acts. Gadgets affect the values of politeness and create deviant behavior in teenagers who can access anything on their gadgets. The results of Hanita's (2023) research show that there is a relationship between gadget use and changes in teenagers behavior, namely that teenagers greet their surroundings less, teenagers tend to skip lessons, and teenagers prefer to solve problems by fighting. According to Rahmad's (2022) research, students are busy with their respective gadgets during recess. Interaction between students is very minimal because students are busy with the gadgets in their hands. Students follow the movements or dance from the videos on their gadgets.

Pratiwi and Malwa's (2022) research shows a correlation between gadget use and changes in teenagers behavior. Teenagers become less social and spend most of their time playing and carrying gadgets wherever they go. From the results of this study and other supporting studies, it can be concluded that a correlation between gadget use and behavioral changes in teenagers.

CONCLUSION

This study shows that gadget use is related to behavioral changes in teenagers. So, it is necessary to take preventive measures so that gadget use does not cause addiction so that the negative impacts that arise can be prevented and anticipated early.

This research provides a major contribution as a basis for determining appropriate interventions as a preventive measure so that gadget use in teenagers does not continue into addictive behavior. However, this study has limitations because the identification of behavioral changes is only measured using a questionnaire. It would be better if changes in behavior in teenagers were carried out by direct observation to get more valid results.

ACKNOWLEDGMENT

We are very grateful to all parties who contributed to this research process.

CONFLICT OF INTEREST

There is no conflict of interest in this research.

REFERENCES

- Cha, S.S. and Seo, B.K. (2018) 'Smartphone use and smartphone addiction in middle school students in Korea: Prevalence, social networking service, and game use', *Health Psychology Open*, 5(1). Available at: <https://doi.org/10.1177/2055102918755046>.
- Kim, E. and Lee, K. (2022) 'Relationship between Smartphone Addiction and Sleep Satisfaction: A Cross-Sectional Study on Korean Teenagers.', *Healthcare (Basel, Switzerland)*. Available at:

- <https://doi.org/10.3390/healthcare10071326>.
- Li, L. et al. (2020) 'Fear of Missing Out and Smartphone Addiction Mediates the Relationship Between Positive and Negative Affect and Sleep Quality Among Chinese University Students.', *Frontiers in psychiatry*, p. 877. Available at: <https://doi.org/10.3389/fpsyt.2020.00877>.
- Lim, J.A. et al. (2015) 'Are Teenagers with Internet Addiction Prone to Aggressive Behavior? The Mediating Effect of Clinical Comorbidities on the Predictability of Aggression in Teenagers with Internet Addiction', *Cyberpsychology, Behavior, and Social Networking*, 18(5), pp. 260–267. Available at: <https://doi.org/10.1089/cyber.2014.0568>.
- Mukti, F.D.W. and Nurchayati (2019) 'Kenakalan Remaja (Juvenile Delinquency): Sebuah Studi Kasus Pada Remaja Laki-Laki Yang Terjerat Kasus Hukum', *Jurnal Penelitian Psikologi*, 06(01), pp. 1–9. Available at: <https://ejournal.unesa.ac.id/index.php/character/article/view/26982>.
- Patra, P.D. and Barida, M. (2021) 'Keefektifan Konseling Kelompok Teknik Acceptance and Commitment Therapy untuk Mereduksi Kecanduan Game Online', *Prosiding Seminar Nasional Bimbingan dan Konseling Universitas Ahmad Dahlan*, 1, pp. 1354–1362.
- Asroni, I. & Ajhuri K. F. (2022). Perubahan Perilaku Remaja Pengguna Gadget di Desa Maguwan Ponorogo. *Islamic Guidance and Counseling*. 3(1), 1 – 11.
- APJII. (2023, 10 Maret). Survei APJII Pengguna Internet di Indonesia Tembus 215 Juta Orang. Diakses pada 26 September 2023, <https://apjii.or.id/berita/d/survei-apjii-pengguna-internet-di-indonesia-tembus-215-juta-orang>
- CNBC. (2024, 25 Februari). Warga RI Sudah Kecanduan Parah, Juara Satu Sedunia!. Diakses pada 01 Januari 2024, <https://www.cnbcindonesia.com/tech/20240225175344-37-517428/warga-ri-sudah-kecanduan-parah-juara-satu-sedunia>
- Kristiana, (2020, 05 Agustus). Kecanduan Internet di RI Meningkat Lima Kali Lipat Selama Pandemi Corona. Diakses pada 21 Januari 2024, <https://health.detik.com/berita-detikhealth/d-5121236/kecanduan-internet-di-ri-meningkat-lima-kali-lipat-selama-pandemi-corona>
- KOMINFO. (2014, 18 Februari). Riset Kominfo dan UNICEF Mengenai Perilaku Anak dan Remaja Dalam Menggunakan Internet. Diakses pada 23 September 2023, https://www.kominfo.go.id/content/detail/3834/siaran-pers-no-17pihkominfo22014-tentang-riset-kominfo-dan-unicef-mengenai-perilaku-anak-dan-remaja-dalam-menggunakan-internet/0/siaran_pers
- KPAI. (2018, 23 Januari). Baru Dibuka 2 Hari, KPAI Sudah Terima 10 Laporan Anak Kecanduan “Gadget”. Diakses pada 01 Oktober 2023, <https://www.kpai.go.id/publikasi/baru-dibuka-2-hari-kpai-sudah-terima-10-laporan-anak-kecanduan-gadget>
- Pratiwi, R. & Malwa, R. (2019). Faktor Yang Mempengaruhi Kecanduan Gadget Terhadap Perilaku Remaja. *Jurnal Ilmiah PSYCHE*. 15(2), 105 – 112.
- Putri, D. (2018). Faktor – Faktor Yang Mempengaruhi Perilaku Menyimpang Remaja. <http://repository.iainbengkulu.ac.id/10>

727/1/SKRIPSI%20DENSI%20PDF.pdf

- Indrayani, M. (2021). Dampak Penggunaan Media Komunikasi (Gadget) terhadap Perubahan Perilaku pada Generasi Muda Hindu. *Jurnal Lampuhyang*. 12(1), 1 - 16.
- Hanita, M. (2023) Pengaruh Penggunaan Gadget Terhadap Perilaku Sosial Siswa di SMP Negeri 7 Muaro Jambi. *Jurnal Pendidikan Tambusai*. 7(1), 1872 – 1881.
- Jarmi, A. & Rahayuningsih, S. (2017). Hubungan Penggunaan Gadget Dengan Kualitas Tidur Pada Remaja.
- Lubis, M. (2018). *Metodologi Penelitian*. Yogyakarta: Deepublish.
- Yanti, N. & dkk. (2021). Hubungan Penggunaan Gadget Terhadap Perubahan Perilaku Pada Remaja. *RJN*. 4(3), 207 – 215.
- Yumarni, V. (2022). Pengaruh Gadget Terhadap Anak Usia Dini. *Jurnal Literasiologi*. 8(2), 107 – 119.