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Characteristic of Adolescents with Gadget Addiction Behavior

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Abstract**—***The percentage of the population aged five years and older who owned a mobile phone was relatively high, with 65.87% in 2021, 67.88% in 2022, and 67.29% in 2023. Gadget use among adolescents could bring both positive and negative impacts. The negative impacts included mental health issues such as anxiety, stress, and gadget addiction, as well as other problems such as decreased interest in learning and concentration, reduced physical activity, limited social interaction, sleep disturbances, and increased stress levels. This study used a descriptive-analytic method, with the research sample consisting of 8th-grade junior high school students. The research instrument used was the Smartphone Addiction Scale - Short Version (SAS-SV). Data analysis was conducted to determine the differences in the frequency distribution of gadget addiction among different groups using the Chi-square test. The highest level of gadget addiction was found among students who owned their own gadgets, totaling 19 individuals (33.9%). A total of 17 students (85.0%) who used gadgets for more than six hours per day were identified as having high addiction levels. In terms of parental educational background, 12 students (28.6%) with parents who graduated from high school or vocational school (SMA/SMK) showed high addiction levels. Additionally, 18 students (30.0%) with working parents also exhibited a high level of gadget addiction.*

Keywords**—** *Adolescents, Gadget Addiction*

I. Introduction

Trends in Internet and Gadget Use Among Indonesian Youth: Risks and Implications

In the past decade, the number of internet users in Indonesia has increased by 52.07%. The adoption of smartphones as communication tools has grown steadily each year. According to the Central Bureau of Statistics (2024), the percentage of the population aged five years and above who owned a mobile phone was 65.87% in 2021, 67.88% in 2022, and 67.29% in 2023. These figures suggest a relatively high level of mobile phone ownership among Indonesians. In 2022, 65.34% of smartphone users were between the ages of 9 and 19 (Adisty, 2022). The COVID-19 pandemic has further accelerated gadget use among children and adolescents. According to a survey conducted by the Indonesian Child Protection Commission (KPAI, 2020), 79% of youngsters were allowed to use devices for activities other than education, and 71.3% of children had their own gadget. Common non-academic uses included video creation, streaming films, playing online games, using social media, searching for information, watching YouTube, and chatting with friends.

Gadget use among adolescents can result in both positive and negative outcomes. On the positive side, digital devices can fulfill adolescents' natural curiosity and serve as helpful tools in the learning process, particularly for completing assignments and finding relevant information (Fitriana et al., 2021). However, the negative effects are significant. These include decreased concentration, time mismanagement, emotional instability, and physical complaints such as headaches and eye strain due to prolonged screen time. Additionally, increased gadget use may reduce time spent with family.

Gadget use has also been linked to various aspects of adolescent mental health, including heightened anxiety, stress, and behavioral addiction. Furthermore, excessive gadget usage can impact learning motivation by lowering interest in academic activities, reducing concentration, limiting physical activity and social interaction, disrupting sleep, and increasing stress levels (Kamaruddin et al., 2023). Moreover, internet use associated with gadget activity heightens the risk of cyber-violence. Although KPAI (2020) reported a relatively low prevalence of 3% (approximately 750 children), this figure may reflect a "tip of the iceberg" phenomenon, suggesting that the actual prevalence is likely much higher.

Recent research further illustrates the negative consequences of gadget addiction in adolescents. A study conducted among junior high school students aged 12–16 in Kartasura found that gadget addiction contributed to sleep disturbances (Fauzan & Supratman, 2023). Additionally, adolescents addicted to gadgets are at greater risk of developing visual impairments, particularly myopia (nearsightedness), with the highest incidence observed among children aged 10 and 12 (Setyawati et al., 2021). Research on social media and gadget addiction among internet users revealed an addiction rate of 65.9% among adolescents aged 12–25, with 31.3% experiencing mild levels of addiction (Gunawan et al., 2021).

Given the increasing prevalence of gadget use and the substantial risks associated with unregulated use among adolescents, it is crucial to examine the characteristics of youth at risk of developing gadget addiction. This information is vital for informing the design of targeted prevention strategies and intervention programs aimed at mitigating the adverse effects of gadget addiction in this vulnerable population.

II. Methods

This study employs a descriptive-analytical research design. The study population consisted of 80 eighth-grade

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students at Private Junior High School X in Banyumas Regency in 2024. Based on Isaac and Michael's sampling table with a 5% margin of error and a 95% confidence level, the required sample size for a population of 80 is 65 participants (Audrey & Wahono, 2025).

The research instrument used to assess the level of smartphone addiction was the Smartphone Addiction Scale–Short Version (SAS-SV), which comprises 10 items measured on a 4-point Likert scale. A score of 1 indicates "strongly disagree," while a score of 4 indicates "strongly agree." The validity test of the Indonesian version of the SAS-SV showed a correlation coefficient (r) of 0.558, and the reliability test yielded a Cronbach's alpha of 0.740 (Arthy et al., 2019). Gadget addiction levels were categorized into two groups: high addiction and low addiction (Kwon et al., 2013).

Daily gadget usage was also recorded and categorized into three groups based on duration: 1–3 hours, 3–6 hours, and more than 6 hours (Cynthia & Sihotang, 2023). To examine the differences in the distribution of gadget addiction levels across different groups, data were analyzed using the Chi-square test.

III. Result and Discussion

The characteristics of respondents based on sociodemographic data, gadget ownership, duration of use, and level of gadget addiction are presented in Table 1.

TABLE I. Distribution of respondents based on sociodemographic characteristics, gadget ownership, duration of use, and level of gadget addiction

Variable	f	%
Age		
1. 13 years old	39	60,0
2. 14 years old	24	36,9
3. 15 years old	2	3,1
Gender		
1. Male	25	38,5
2. Female	40	61,5
Gadget Ownership		
1. Owns a Personal Device	56	86,2
2. Doesn't Own a Personal Device	9	13,8
Duration of Gadget Use		
1. More than 6 hours	20	30,8
2. 3-6 hours	32	49,2
3. 1-<3 hours	13	20,0
Parental Education		73,1
1. Elementary to Junior HS	14	69,2
2. Senior High School	45	9,2
3. Diploma or Higher	6	
Parental Occupation		
1. Employed	60	92,3
2. Unemployed	5	7,7
Level of Gadget Addiction		
1. High	21	32,3
2. Low	44	67,7

Table 1 shows that the majority of students were 13 years old (39 students, 60.0%), female (40 students, 61.5%), owned a personal smartphone (56 students, 86.2%), used gadgets for 3–6 hours per day (32 students, 49.2%), and had a low level of gadget dependency (44 students, 67.7%). Meanwhile, the characteristics of the respondents' parents were predominantly high school education or equivalent (45 individuals, 69.2%) and employment status as working (60 individuals, 92.3%).

TABLE 2. Distribution of Respondents Based on Gadget Ownership and Level of Gadget Addiction

Gadget Ownership	Level of Gadget Addiction				Total	
	High		Low			
	n	%	n	%	n	%
Personal ownership	19	33,9	37	66,1	56	100,0
Not personally own	2	22,2	7	77,8	9	100,0
Total	21	32,3	44	67,7	65	100,0

Table 2 shows that among 56 students who owned a personal gadget, 37 students (66.1%) had a low level of addiction, while the remaining 19 students (33.9%) exhibited a high level of addiction. In contrast, among the 9 students who did not own a personal gadget, 2 students (22.2%) had a high level of addiction, while the remaining 7 students had a low level of addiction.

TABLE 3. Distribution of Respondents Based on Gadget Usage Duration and Level of Gadget Addiction

Gadget Usage Duration	Level of Gadget Addiction				Total	
	High		Low			
	n	%	n	%	n	%
>6 hours	17	85,0	3	15,0	20	100,0
3-6 hours	1	3,1	31	96,9	32	100,0
1-<3 hours	3	23,1	10	76,9	13	100,0
Total	21	32,3	44	67,7	65	100,0

Table 3 shows that among 20 students who used gadgets for more than 6 hours per day, 17 students (85.0%) had a high level of addiction, while the remaining 3 students (15.0%) had a low level of addiction. Among 32 students with a daily gadget use of 3–6 hours, only 1 student (3.1%) exhibited a high level of addiction, while the remaining 31 students (96.9%) had a low level of addiction. Meanwhile, among 13 students who used gadgets for 1 to less than 3 hours per day, 3 students (32.3%) had a high level of addiction, while the remaining 10 students (67.7%) had a low level of addiction.

TABLE 4. Distribution of Respondents Based on Gadget Usage Duration and Parental Education Level

Parental Education Level	Level of Gadget Addiction				Total	
	High		Low			
	n	%	n	%	n	%
Elementary-Junior High School	9	52,9	8	47,1	17	100,0
Senior High School	12	28,6	30	71,4	42	100,0
Diploma or Higher	0	0,0	6	100,0	6	100,0
Total	21	32,3	44	67,7	65	100,0

Table 4 shows that among 17 students whose parents had an educational background of elementary to junior high school, 9 students (52.9%) had a high level of addiction, while the remaining 8 students (47.1%) had a low level of addiction. Among 42 students whose parents had a high school or vocational school education, 12 students (28.6%) exhibited a high level of addiction, while the remaining 30 students (71.4%) had a low level of addiction. Among 6 students whose parents had a diploma-level education or higher, none

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showed a high level of addiction (0%), and all 6 students (100%) had a low level of addiction.

TABLE 5. Distribution of Respondents Based on Gadget Usage Duration and Parental Occupation

Gadget Usage Duration	Level of Gadget Addiction				Total	
	High		Low			
	n	%	n	%	n	%
Working	18	30,0	42	70,0	60	100,0
Not working	3	60,0	2	40,0	5	100,0
Total	21	32,3	44	67,7	65	100,0

Table 5 shows that among 60 students whose parents were employed, 18 students (30.0%) exhibited a high level of addiction, while the remaining 42 students (70.0%) had a low level of addiction. In contrast, among 5 students whose parents were unemployed, 3 students (60.0%) had a high level of addiction, while the remaining 2 students (40.0%) had a low level of addiction.

IV. Discussion

Addiction and Adolescent Gadget Use: An Analytical Overview

Addiction is a compulsive or repetitive need and use of substances or objects that can create habitual behavior. It is recognized within the diagnostic nomenclature of mental disorders and leads to serious health, social, and economic problems (Hesse, 2006). Approaches to analyzing gadget (smartphone) use often rely on passive methods, such as measuring the duration or time spent on gadgets. Alternatively, active usage can also be assessed by monitoring user interactions, including tapping, scrolling, and typing activities (Noë et al., 2019).

The American Academy of Pediatrics recommends that children aged six years and above should have consistent limitations set on gadget use, both in terms of duration and the types of media consumed. Screen time should not interfere with sleep, physical activity, or other behaviors (Indrakanti et al., 2025). While smartphones can be productive tools, failure to manage their usage—such as the inability to resist checking messages, emails, or other apps, which disrupts work, school, and social relationships—should prompt reconsideration of their role in daily life. Importantly, it is not the gadget itself that triggers compulsive use, but rather the content—such as games, applications, and social media platforms—that connects individuals in the digital world.

Gadget addiction involves several aspects of impulse control, including virtual relationships (e.g., addiction to social networking), compulsive information consumption (e.g., surfing the web, watching videos, gaming, or checking news), all of which can diminish productivity at school or work (Robinson et al., 2025). The findings of this study align with previous research, which indicated that among adolescents aged 10–18 years, 48.8% (148 respondents) used gadgets for 6 hours per day, 28% (85 respondents) for 2 hours, and 23% (70 respondents) for 4 hours (Setyawati et al., 2021).

A survey conducted by the Indonesian Child Protection Commission (KPAI) reported that most children and adolescents use gadgets primarily for online gaming (55%). Among junior high school students, the most commonly played online games were war games (73.5%) and adventure games (45.5%). The types of games played were similarly distributed between male and female students, with role-playing and adventure games being the most dominant in both groups (KPAI, 2020).

This study was conducted among early adolescents (aged 12–15), a transitional phase between childhood and adolescence (Al Husna, 2022). At this stage, adolescents often behave like adults but without fully developed reasoning, and they are inclined to explore new experiences as part of their identity formation. Hence, gadgets—with their diverse applications, images, and information—are particularly appealing to this age group (Haerani, 2023).

Adolescents' preference for virtual interaction over face-to-face socialization is influenced not only by technological advancements but also by their developmental psychological characteristics, particularly egocentrism. Egocentrism in adolescence refers to a psychological tendency in which adolescents focus primarily on their own perspective, often disregarding others' viewpoints. This egocentric behavior is reflected in how adolescents think, feel, and act, often believing that no one else truly understands them (Habsy et al., 2024).

In terms of intellectual development, including language and cognitive aspects, adolescents' high levels of curiosity and imagination can drive them to search for information, images, and other content online. Therefore, it is essential for both schools and families to guide adolescents in using gadgets and the internet for constructive purposes. Without such guidance, adolescents may instead seek out harmful content, such as pornography or violent media (Suryana et al., 2022).

The results of this study indicate that students whose parents had completed only high school or equivalent levels of education were more likely to exhibit signs of gadget addiction—42 out of 65 students. This can be attributed to the fact that most parents in the sample had attained only a high school education (45 out of 65, or 69.2%). Furthermore, students whose parents (in this study, specifically fathers) were employed were more likely to show signs of gadget addiction compared to those whose parents were unemployed. Of the 65 students, 60 had employed fathers (92.3%).

Parental characteristics, including education level and occupation, can significantly influence child development. Education is a conscious and planned effort to create a learning environment and educational processes that actively help students develop their spiritual, emotional, personal, intellectual, moral, and practical capacities for themselves, society, the nation, and the state. Educational levels are determined by students' developmental stages, goals, and capacities, and include basic education (elementary and junior high school), secondary education (senior high school), and higher education (diploma and university level) (Indonesian Ministry of National Education, 2003).

Educational attainment is closely related to knowledge acquisition: the higher a person's educational level, the broader their access to information. This knowledge, in turn, is one of the key factors influencing health-promoting behaviors

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(Pakpahan et al., 2021). For example, regulating children's gadget use is a reflection of parenting practices. Studies show that education level positively correlates with parenting style. One negative outcome of a permissive parenting style—where boundaries and rules are lacking, and control is minimal—is that children often develop poor social skills, egocentrism, lack of focus, and low discipline (Awiszus et al., 2022).

Working parents, especially when both mother and father are employed, are often better able to provide children with gadgets that support their development. However, the demands of their careers may reduce the amount of time and attention they can give to their children (Yulihasri & Mahyuddin, 2021). Limited parental attention can lead children to believe that their parents prioritize work over them, prompting them to seek enjoyment or comfort through extended gadget use.

V. Conclusion

The eighth-grade students of SMP X predominantly exhibited the following characteristics: the majority were 13 years old (39 students, 60.0%), female (40 students, 61.5%), owned a personal smartphone (56 students, 86.2%), used gadgets for 3–6 hours per day (32 students, 49.2%), and had a low level of gadget dependency (44 students, 67.7%). Meanwhile, most of the respondents' parents had completed senior high school or an equivalent level of education (45 individuals, 69.2%) and were employed (60 individuals, 92.3%).

Among the 56 adolescents who owned a smartphone, those with a high level of gadget addiction were most frequently found to have the following characteristics: personal ownership of a gadget (19 individuals, 33.9%), daily gadget use exceeding 6 hours (17 individuals, 85.0%), parents with a high school or vocational school educational background (12 individuals, 28.6%), and parents who were employed (18 individuals, 30.0%).

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