

The dangers of gadget addiction on the mental health of rural adolescents in Ciamis District

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ABSTRACT

The increasing use of gadgets among Indonesian teenagers, with 98.3% using mobile phones, has raised concerns about its impact on mental health. Studies indicate that excessive gadget use can lead to anxiety, depression, sleep disorders, social isolation, poor academic performance, and problematic behavior. However, public awareness of these risks remains low, particularly in Ciamis Regency, where no definitive data on gadget addiction and mental health exists. This study aims to assess the prevalence of gadget addiction and its impact on adolescent mental health in Ciamis Regency through a cross-sectional observation of 100 teenagers aged 13-18 years. Socio-demographic factors such as age, gender, school type, parental occupation, and academic performance were analyzed, along with variables like gadget type, usage duration, internet activity, and parental or teacher supervision. To measure gadget addiction, the SASSV Scale was used, while mental health was assessed through the Generalized Anxiety Disorder Scale (GAD-7) and the Patient Health Questionnaire (PHQ-9) for depression. The study found a strong correlation between gadget dependence and mental health, with anxiety (correlation coefficient of 0.794) and depression (0.619) both significantly linked to gadget use. The findings highlight the negative effects of uncontrolled gadget use on adolescent mental well-being, particularly regarding anxiety. Key influencing factors include the frequency, type of application used, and duration of gadget use. The study emphasizes the need for effective strategies to manage gadget use among adolescents to mitigate these mental health risks.

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INTRODUCTION

The increasing number of gadget users in Indonesia, where internet users in Indonesia have reached 213 million people. This number is equivalent to 77% of the total population of Indonesia, which is 276.4 million people. In addition, it was found that the average Indonesian uses the internet for 7 hours 42 minutes a day with the majority of internet users using mobile phones as much as 98.3% (Sopian et al., 2024).

Currently, young people are becoming the focus of attention because they are much more at risk of cellphone addiction than adults. Teenagers are often unable to cope with peer pressure so they tend to use gadgets early. especially teenagers from rural areas are more likely to experience addiction. (Kominfo, 98 C.E.) The Ministry of Communication and Information (Kemkominfo) found that 98% of children and adolescents know about the internet and 79.5% of them are internet users(Saskia Chairani, 2024).

Several studies have shown that excessive use of gadgets can have a negative impact on adolescent mental health such as anxiety, depression, decreased sleep quality, social isolation to decreased academic achievement and other behavioral problems(Nikhita et al., 2015). This was also found by researchers in 2023 where initial research was conducted on school-age children and adolescents, it was found that 34.1% of school-age children were addicted to gadgets and it was also found that 51.6% of adolescents experienced high gadget use every day so that adolescents experienced poor sleep quality problems by 36.6%(Lopez-Fernandez et al., 2014). Although this gadget addiction was found to cause various problems in adolescents, there is still a lack of public awareness and understanding of these detrimental impacts. The current problem is that in Ciamis Regency itself there is no definite data on how many adolescents are addicted to gadgets(Bhanderi et al., 2021). In fact, knowing the prevalence of gadget addiction allows related parties such as parents, teachers and health institutions to easily identify potential problems early on so that they can develop more effective intervention plans to prevent gadget addiction in adolescents.(Isnainingsih & Sari, 2022) Adolescence is a critical period in the development of an individual, so that environmental influences including digital technology can have long-term impacts on adolescent mental health. Therefore, this study is very important to be able to understand and protect the mental health of adolescents as the golden generation of the nation's successors. The purpose of this study is to assess the prevalence of gadget addiction and its impact on mental health among adolescents in Ciamis Regency(Kuantitatif, 2016).

RESEARCH METHOD

This type of research is a cross-sectional study conducted in field practice in Ciamis Regency. The population in the study were all school teenagers aged 13-18 years in Ciamis Regency totaling 75696 people. The number of samples was calculated using the Slovin formula (number N = 75696).

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{75696}{1 + 75696(0,1)^2}$$

$$n = 99,8 \approx 100$$

The number of samples after calculation using the Slovin formula is 100 (17). The sampling technique in this study uses cluster sampling. Samples were taken from adolescents in several schools that have the largest number of students in Ciamis Regency. Samples were selected by random sampling in several schools with the largest number of students located in rural areas of Ciamis Regency.

Furthermore, after determining the adolescent sample, a learning information sheet will be given. Furthermore, the researcher will assess the characteristics of the respondents including socio-demographic status consisting of age, gender, type of school, level of education and parental occupation, and academic achievement. (Arthy et al., 2019)In addition, the variables of gadget use will be assessed including gadget ownership, type of gadget, internet usage activity, duration of

gadget use, restrictions from parents and teachers, cost for gadget use. To assess gadget addiction, the SASSV (Smartphone Addiction Scale Short Version) instrument created by (Asare, 2015) was used, which was adapted into the Indonesian version by (Wu et al., 2019) using forward and backward translation consisting of 5 (five) aspects, namely daily life disturbance, withdrawal, cyberspace oriented relationship, overuse, and tolerance (Katiandagho, 2023). And to assess adolescent mental health, stress was assessed using the Generalized Anxiety Disorder Scale (GAD-7) and depression using the Patient Health Questionnaire (PHQ-9). The analysis was carried out using SPSS. Categorical variables will be percentageized and continuous variables will be presented in the form of mean, median, and standard deviation. The Pearson Chi Square test will be used to assess the correlation between gadget addiction and socio-demographic factors, gadget usage patterns, depression and anxiety (Kamaruddin et al., 2023).

RESULTS AND DISCUSSIONS

Univariate Analysis

- a. Respondent Characteristics, This research was conducted in the Ciamis Regency Health Center Area, the research time was carried out for approximately 3 months. The sampling of the research population was carried out by cluster sampling from schools that had the largest number of teenagers. The number of subjects was 100 rural teenagers in Ciamis Regency with the following characteristics:

Table 1. Characteristics of teenagers using gadgets in Ciamis Regency (n=100)

Variable	Frequency
Age	47
12-15 years	38
15-18 years	15
>18 years	
Gender	
Male	47
Female	53
Class	
7	33
9	24
11	15
12	28
School Type	
Government	100
Father's Education	
Basic Education	41
Up to high school	55
Higher Education	4
Mother's Education	
Basic Education	53
Up to high school	43
Higher Education	4
Father's occupation	
PNS	2
Self-employed	35
Labor	63
Mother's Occupation	
Housewife	87
Labor	5

Variable	Frequency
PNS	2
Self-employed	6
Number of Family Members	
Up to 4	68
5-7 People	38
Cell phone usage	
Owned	83
Sharing with parents	12
Sharing with siblings	3
Sharing with friends	2
Cell Phone Type	
Smartphone	94
Non-Smartphone	6
Use of Other Gadgets	
None	74
Uses 1 other gadget	19
Using 2 other gadgets	7
Daily gadget usage	
1 hour	38
2-3 hours	52
More than 4 hours	10
Use of gadgets for school	
1 hour	38
2-3 hours	52
More than 4 hours	10
Parents Restrict Gadgets	
Yes	63
No	37
School restricts the use of gadgets	
Yes	85
No	15
Costs incurred per month for gadgets	
None	15
Rp. 10,000-30,000	13
Rp. 31,000- 50,000	22
Rp. 51,000 -100,000	24
>Rp. 100,000	26

Based on the results of the descriptive analysis that has been carried out, there are several important findings regarding the use of gadgets and the socio-demographic characteristics of rural adolescents in Ciamis Regency (Febrina & Mariyana, 2020). In terms of age, the majority of respondents involved in this study were in the 12-15 year age group, which covers 47% of the total sample. This shows that most of the adolescents who were the objects of the study were still in the early stages of adolescence. In addition, as many as 38% of respondents were in the middle adolescent group aged 15-18 years, while the late adolescent age group over 18 years was relatively small with a proportion of 15%. This reflects that the use of gadgets among adolescents has started since they were in their early teens (Mau & Gabriela, 2021).

In terms of gender, the distribution of respondents was relatively balanced between males and females, with females slightly more dominant, namely 53% of the total sample, while males

covered 47%. This balance shows that gadget dependence is not limited to one particular gender, but occurs evenly among adolescents, both male and female.

In terms of educational class, respondents came from various levels of education, with the majority being in grade 7 at 33%, followed by grade 12 at 28%. Grade 9 and 11 groups also had significant representation, at 24% and 15%, respectively. This shows that gadget use has become widespread at various levels of education, from early to late adolescence. Interestingly, all respondents came from government schools, with a proportion of 100%, indicating that this study focuses on adolescents who are educated in public schools in rural areas.

Regarding parental education, most of the respondents' fathers had education up to high school level, which was 55%, while 41% only achieved elementary education, and 4% had higher education. On the other hand, the majority of mothers' education was also at the elementary level, which was 53%, with 43% reaching high school level and only 4% having higher education. These data show that most of the respondents come from families with relatively low parental education backgrounds, which may affect the understanding and supervision of gadget use at home.

In terms of parental occupation, 63% of the respondents' fathers work as laborers, while 35% are self-employed, and only 2% work as Civil Servants (PNS). Meanwhile, the majority of the respondents' mothers are housewives (IRT), which is 87%, with a small proportion working as laborers (5%) or self-employed (6%). These data show that most of the respondents come from families with simple economic backgrounds, where parents' jobs tend to be in the informal sector or low-income jobs.

The number of family members is also one of the variables taken into account, where the majority of respondents come from families with up to 4 members (68%), while the rest come from families with 5-7 members (38%). This condition can affect the pattern of interaction and use of gadgets at home, especially in terms of access to digital devices and the level of parental supervision.

Regarding gadget use, most teenagers in this study have personal cellphones, namely 83%, while a small number share with parents (12%) or with siblings and friends. The majority of them use smartphones (94%), while only a few still use non-smartphone cellphones (6%). In addition, 74% of respondents do not use other gadgets besides cellphones, while 19% use one additional gadget, and 7% use two other gadgets. This shows that access to digital technology has become an integral part of the lives of teenagers in rural areas, where smartphone use dominates their daily activities.

In terms of gadget usage duration, the majority of teenagers use gadgets for 2-3 hours per day (52%), with another 38% using gadgets for 1 hour, and 10% using gadgets for more than 4 hours per day. This high usage duration is also seen in the context of gadget usage for school purposes, where most respondents use gadgets for 2-3 hours every day for learning activities.

In terms of limiting gadget usage, 63% of respondents reported that their parents limit gadget usage at home. Meanwhile, schools also implement gadget usage restrictions, with 85% of respondents stating that their schools have gadget restriction policies. This shows that there are efforts from families and educational institutions to control gadget usage among teenagers.

Finally, in terms of costs incurred for gadget usage, 26% of respondents spend more than IDR 100,000 per month, followed by 24% who spend between IDR 51,000 and IDR 100,000. This shows that there is a significant cost burden that must be borne by families to support teenagers' digital activities.

- b. Overview of Gadget Dependence, Below, researchers describe the results of research on gadget dependence among adolescents in Ciamis Regency as follows:

Table 2. Overview of gadget dependence in rural adolescents in Ciamis Regency (n=100)

Total	Male	Female	Variables
Gadget Dependence (SAS-SV)			
No Dependence	30	14	16

Dependence	70	33	37
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Based on the results of the descriptive analysis obtained, there are several interesting findings related to gadget dependence and its impact on adolescent mental health, both in terms of depression and anxiety. In terms of gadget dependence based on the SAS-SV scale, where the results show that the majority of respondents, 70%, were identified as experiencing gadget dependence, consisting of 33 males and 37 females. Only 30% of respondents did not experience dependence, with 14 males and 16 females in this group. This distribution shows that gadget dependence is more experienced by women than men, although the difference is not too significant (Zakiyuddin et al., 2020).

Overall, these findings indicate that high gadget use among rural adolescents in Ciamis Regency can pose a risk of addiction that has an impact on their mental health. The level of cellphone dependence, as measured using two SAS-SV scales, shows that 70% of adolescents in this study experienced a fairly significant level of dependence (Hotmaida et al., 2022).

c. Mental Health Overview, Below researchers describe the mental health conditions of adolescents in Ciamis Regency as follows:

Table 3. Overview of mental health in rural adolescents in Ciamis Regency (n=100)

Variable	Total	Male	Female
Depression			
No symptoms	30	15	15
Mild depression symptoms	39	21	18
Mild depression	20	11	9
Moderate depression	8	0	8
Severe depression	3	0	3
Anxiety			
Minimal anxiety	30	15	15
Mild anxiety	36	18	18
Moderate anxiety	33	14	19
Severe anxiety	1	0	1

For the assessment of mental health related to depression, which was measured using the Patient Health Questionnaire (PHQ), most respondents, namely 39 people, experienced mild depressive symptoms, with a relatively balanced distribution between men (21 people) and women (18 people). As many as 30% of respondents did not show any symptoms of depression at all, with an equal distribution between men and women (15 people each). Meanwhile, 20% of respondents experienced mild depression, of which 11 were men and 9 were women. Moderate depression was found in 8 women, and severe depression was experienced by 3 women. Interestingly, no men experienced moderate or severe depression, indicating that more severe cases of depression are experienced by women.

Furthermore, regarding anxiety, which was assessed using Generalized Anxiety Disorder (GAD), most respondents (36%) experienced mild anxiety, with 18 men and 18 women. Meanwhile, 33% of respondents experienced moderate anxiety, with slightly more women (19 people) than men (14 people). A total of 30% of respondents showed minimal levels of anxiety, with an equal distribution between males and females. There was one case of severe anxiety recorded, and this was experienced by a female. This suggests that females tend to be more susceptible to more severe anxiety than males.

Overall, the results of this analysis indicate that gadget addiction is a fairly common phenomenon among rural adolescents, with a significant impact on their mental health. Higher symptoms of depression and anxiety were found in female respondents, especially for moderate to severe depression and moderate to severe anxiety. Gadget addiction was more common among females, indicating a pattern of gadget use that may be more intense among female adolescents than male ones.

Relationship Analysis

Table 4. The dangers of gadget dependence on mental health in rural adolescents in Ciamis Regency (n=100)

Independent Variable	Dependent Variable	Mean	Standard Deviation	r (Correlation)	p-value (Sig.)
Gadget Dependence	Depression	2.15	1.038	0.619	0.000
Gadget Dependence	Anxiety	2.05	0.821	0.735	0.000

Based on the results of the bivariate analysis conducted to see the effect of gadget dependence, measured by the Smartphone Addiction Scale-Short Version (SAS-SV), on adolescent mental health as measured by Generalized Anxiety Disorder (GAD), a very significant and strong relationship was found between the two variables. The Spearman's rho correlation coefficient value of 0.735 with a significance (Sig. 2-tailed) of 0.000 indicates that gadget dependence is closely related to the level of anxiety in adolescents. This correlation value indicates that the higher a teenager's dependence on gadgets, the greater the level of anxiety they experience.

These results confirm that gadget dependence has a significant impact on mental health, especially in terms of increasing anxiety. The high strength of the relationship (with a correlation coefficient of 0.735) indicates that excessive use of gadgets directly contributes to the emergence of significant anxiety symptoms in adolescents (Bhanderi et al., 2021).

In addition, when compared with the results of the effect of gadget dependence on mental health as measured using the Patient Health Questionnaire (PHQ), which has a correlation coefficient of 0.619, the effect of gadget dependence on anxiety (GAD) is actually greater (Katiandagho, 2023). This shows that gadget dependency has a greater impact on anxiety levels compared to symptoms of depression or other mental health problems.

Overall, these findings provide an overview that uncontrolled gadget use has a major impact on adolescent mental health, especially in terms of anxiety. Therefore, interventions are needed to reduce excessive gadget use in order to prevent further negative impacts on adolescent psychological health (Mardiah et al., 2022).

The results of this study are in line with several other studies showing that intensive gadget use can contribute to increased anxiety among adolescents, which is often caused by their inability to manage time and social interactions effectively (Jamir et al., 2019).

One of the factors that influences adolescent anxiety is the phenomenon of nomophobia, which is the fear of losing access to their gadgets. Research shows that adolescents who spend excessive time in front of screens tend to experience higher anxiety, which can affect their overall quality of life. In addition, excessive gadget use can also disrupt adolescent sleep patterns, which in turn can worsen their mental condition (Setyaningsih & Setyowatie, 2023). This sleep disorder is often caused by exposure to blue light from gadget screens, which disrupts the production of the hormone melatonin and causes insomnia.

The negative impacts of gadget use are not only limited to anxiety, but also include social and emotional problems. Teenagers who are too dependent on gadgets often have difficulty in building healthy social relationships (Keswara et al., 2019). They tend to be more individualistic and less able to interact directly with peers, which can lead to social isolation. Research shows that adolescents experience negative impacts from gadget use, including anxiety and the inability to interact socially effectively (Bhanderi et al., 2021).

During the COVID-19 pandemic, gadget use among adolescents has increased significantly, contributing to increased anxiety and stress. With many activities shifting to online platforms, adolescents are increasingly exposed to content that can trigger anxiety, such as negative news and social comparison on social media. This shows that there is a close relationship between the intensity of gadget use and adolescent mental health, where excessive use can worsen adolescent psychological conditions (Keswara et al., 2019).

In the context of education, uncontrolled gadget use also has an impact on adolescents' academic achievement. Research shows that adolescents who spend too much time using gadgets

tend to have lower academic achievement, because they focus more on entertainment than learning. This adds to their psychological burden, because the pressure to excel in school can increase their anxiety levels.

In addition, excessive gadget use can lead to detrimental behavioral changes. Teenagers who are exposed to negative content on social media, such as bullying and social comparison, may experience decreased self-esteem and increased anxiety. Research shows that teenagers who frequently use social media are at higher risk of experiencing mental health disorders, including anxiety and depression (Bhandari et al., 2017).

In conclusion, uncontrolled gadget use among teenagers has a significant impact on their mental health, especially in terms of anxiety. With the increasing dependence on technology, it is important to develop effective strategies to manage gadget use and support adolescent mental health. Further research is needed to better understand the relationship between gadget use and mental health, as well as to identify interventions that can help teenagers overcome these challenges (Fauziah et al., 2024).

CONCLUSION

This study shows that uncontrolled gadget use among adolescents has a significant impact on their mental health, especially in terms of anxiety. Our findings indicate that increasing dependence on technology can contribute to increased levels of anxiety among adolescents. Factors such as the frequency of gadget use, the type of applications used, and the duration of use play an important role in influencing mental well-being. As a result of this study, it can be concluded that there is a strong relationship between gadget use patterns and mental health disorders, especially anxiety. Therefore, it is important to develop and implement effective strategies to manage gadget use among adolescents. It is important to develop effective strategies to manage gadget use among adolescents, such as healthy usage guidelines and screen time limits to reduce negative impacts on mental health. Education is also needed to raise awareness of these impacts, involving parents, educators, and adolescents to be able to manage technology wisely. Additional support for adolescents who experience gadget anxiety is also important, through psychological interventions and emotional support. Further research is needed to explore gadget use patterns and their impacts, as well as to develop policies and regulations that support healthy use in schools and social environments.

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