

# THE ASSOCIATION BETWEEN SCREEN TIME AND PSYCHOLOGICAL DISTRESS AMONG INDONESIAN FEMALE ADOLESCENTS: A CROSS-SECTIONAL STUDY *Hubungan Screen Time dengan Tekanan Psikologis pada Remaja Putri: Studi Cross Sectional*

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## ABSTRACT

**Background:** Excessive smartphone use has a negative impact on health, especially in the adolescent age group. Adolescent females who screen time for two hours or more a day after school have the potential to experience psychological distress. **Purpose:** To analyze the relationship between screen time behavior and psychological distress in high school adolescent females. **Methods:** This quantitative study using a cross-sectional design. The research locations were carried out in three schools, namely SMA (Senior High School) 9 Balikpapan, SMA 2 Samboja and SMA 3 Penajam Paser Utara. The population was 1,112 adolescent females and the sample was 272 adolescent females. The sampling technique used was proportional random sampling. The analysis test used the chi-square test. Variable measurements of screen time and psychological distress are used in the Questionnaire for Screen Time of Adolescents and the Kessler Psychological Distress Scale. **Results:** The p-value < 0.05 means that there is a relationship between screen time and psychological distress in high school adolescent females. **Conclusion:** Excessive screen time has an impact on the psychological distress of high school females. There is a need to increase mental health literacy and support for parents and schools in restricting the use of smartphones at home and at school.

**Keywords:** screen time, psychological distress, adolescent females

## ABSTRAK

**Latar Belakang:** Penggunaan smartphone yang berlebihan berdampak negatif pada kesehatan terkhususnya pada kelompok usia remaja. Remaja putri yang melakukan screen time selama dua jam atau lebih perhari setelah pulang sekolah berpotensi mengalami tekanan psikologis. **Tujuan:** Menganalisis hubungan antara perilaku screen time dan tekanan psikologis pada remaja putri sekolah menengah atas. **Metode:** Merupakan penelitian kuantitatif dengan menggunakan desain cross-sectional. Lokasi penelitian dilaksanakan pada tiga sekolah yaitu SMA 9 Balikpapan, SMA 2 Samboja dan SMA 3 Penajam Paser Utara. Populasi pada penelitian ini sebesar 1.112 remaja putri dan sampel penelitian yaitu sebanyak 272 remaja putri. Teknik sampling yang digunakan yaitu proportional random sampling. Uji analisis menggunakan uji chi-square. Pengukuran variabel screen time dan tekanan psikologis menggunakan Questionnaire for Screen Time of Adolescents dan Kessler Psychological Distress Scale. **Hasil:** Nilai p-value < 0,05 yang artinya ada hubungan antara screen time dengan tekanan psikologis pada remaja putri sekolah menengah atas. **Kesimpulan:** Screen time berlebihan memiliki dampak pada tekanan psikologis pada remaja putri sekolah menengah atas. Perlu adanya peningkatan literasi kesehatan mental serta dukungan orang tua dan sekolah dalam memberikan pembatasan penggunaan smartphone di rumah maupun di sekolah.

**Keyword:** screen time, tekanan psikologis, remaja putri

## INTRODUCTION

Today's technological developments are increasingly sophisticated. At one time, we can access various forms of information that exist in electronic devices such as smartphones. Based on data Central Statistics Agency (2024), Indonesia was the largest age group of smartphone users which is the 15–24-year-old age group. This age is included in the age at which it is vulnerable to addiction to smartphone use. Research of Loleska & Pop-Jordanova (2021) stated that in general, excessive smartphone use has a negative impact on health, especially in the adolescent age group.

Nowadays, the display offered by smartphone devices is getting more and more attractive. This attraction makes adolescents spend their time most for doing Screen Time on the smartphone owned. Screen time is the amount of time spent watching videos, playing games, or surfing the internet through electronic devices. Based on a summary of data from the National Center for Health Statistics (NCHS) in United States, it was obtained that during 2021 to 2023, 50.4% of adolescents aged 12-17 years have spent their time to Screen Time for four hours or more in a day (Zablotsky *et al.*, 2024).

Adolescents today are increasingly easily connected to the digital world, including the use of gadgets/gadgets to access the internet. Data shows that the growth of internet users in Indonesia is very rapid, especially among adolescents. Based on the results of a survey by the Indonesian Internet Service Providers Association (APJII), the majority of internet users are in generation Z (born 1997-2012) as much as 34.40% (Haryanto, 2024). Further study by Ainida *et al.*, (2020) revealed that adolescent groups contribute significantly to the growth of internet users, with around 12.5 million adolescents aged 15-19 years and 768 thousand adolescents aged 10-15 years

becoming active internet users. In the digital age, young people are growing up with a high dependence on electronic devices, so the time allocated to interact with screens becomes an important aspect of their lives (Stiglic & Viner, 2019).

There are many benefits of using the internet for adolescents, especially in daily life to get entertainment, access learning and support other professional activities. However, in the midst of the many benefits obtained, Screen Time excess also has negative effects on social-emotional development, including obesity, sleep disorders, depression and anxiety (Muppalla *et al.*, 2023). Teens who do Screen Time for two hours or more a day after school has the potential to experience psychological distress higher than the group of adolescents who did Screen Time less than 2 hours per day (Kleppang *et al.*, 2019).

Psychological distress is a psychological condition characterized by symptoms of depression, anxiety, post-traumatic stress disorder or stress in general. High psychological distress is a mental health disorder that can hinder daily activities. For adolescents who experience psychological distress can lead to cognitive decline in the adolescent (Dewar *et al.*, 2021). Other research also stated that psychological distress among adolescents can have a negative impact on academic achievement in school (Anyanwu, 2023). A study stated that women are more at risk of depression due to Screen Time excessive compared to men (Kleidermacher & Olfson, 2024). Another study also found that adolescent females used more internet to improve depressive symptoms compared to adolescent boys (Twenge & Farley, 2021). This is associated with adolescents spending more and more time on social media screen time increasing the risk of adolescent depression, especially in adolescent females (Paulus *et al.*, 2023).

Research conducted by Kleppang *et al.*, (2019) in Norway focused on analyzing Screen Time and psychological distress in the adolescent age group without distinguishing gender differences, while this study focused on analyzing the risks Screen Time towards psychological distress in the group of adolescents of the female gender. This is because adolescent females are more at risk of mental health disorders due to excessive screen time compared to men (Twenge & Farley, 2021) Women tend to compare themselves to others they see on social media, especially in terms of appearance and accomplishments (Cui *et al.*, 2023). This causes adolescents females to pay more attention to how they appear in the eyes of others, so they may feel less satisfied with themselves. As a result, mental health issues such as anxiety, low self-esteem, or even depression can arise due to the pressure to meet beauty standards or unrealistic success on social media. Hence, this study is important to analyze the relationship between behaviors Screen Time and psychological distress in adolescent females of high school.

## **METHOD**

### **Study Design**

This study was quantitative research using a cross-sectional design. The independent variable in this study was the screen time variable and the dependent variable, namely psychological distress. The operational definition of screen time was the amount of time spent watching videos, playing games, or surfing the internet through electronic devices while psychological distress was negative emotional stress experienced by adolescent females such as anxiety, depression and stress.

### **Population and Sample**

The research locations were carried out in three schools, namely SMA (Senior High School) 9 Balikpapan, SMA 2 Samboja

and SMA 3 Penajam Paser Utara. These three schools have the same characteristics in terms of demographic location, namely being in the buffer area of the capital city of the archipelago (IKN). The research was conducted in the region due to the increase in internet access and digital technology. This has the potential to lead to increased exposure of adolescents to social media and other digital platforms that can have an impact on their mental health. The population in this study was 1.112 students. The research sample was 272 adolescent females. The sampling technique used in this study was proportional random sampling. The number of samples from each high school above were SMA 9 Balikpapan with 184 students, SMA 3 Penajam Paser Utara with 20 students and SMA 2 Samboja with 68 students. The selection of students who took part in this study was based on certain classes, namely students in grades 10 and 11.

### **Data Collection and Analysis**

In this study, data on psychological distress variables was collected using a questionnaire instrument adopted from the Kessler Psychological Distress Scale. This instrument was used to measure the level of psychological distress, especially the level of anxiety and depression. This instrument consists of 10 questions that assessed the frequency of psychological symptoms in the last 4 weeks. The data collection of this research was self-administered through the google form link distributed to students. Meanwhile, the screen time variable used the Questionnaire for Screen Time of Adolescents. This instrument is used to measure the duration and type of screen activity in adolescents. This instrument uses five categories of activities in measuring screen time for studying, work/internship activities, watching videos, playing games and using social media. In this study, univariate and bivariate analysis is presented.

Univariate analysis was in the form of frequency distribution of respondent characteristics consisting of school origin, gender and adolescent age, screen time behavior and psychological distress. Bivariate analysis used the chi-square test to analyze the relationship between screen time and psychological distress in high school students. The variable screen time is divided into two categories, namely risky (Average screen time  $\geq 16$  hours/day) and non-risky (Average screen time  $< 16$  hours/day) (Knebel *et al.*, 2022). Meanwhile, the psychological distress variable was scored 1-5 on each answer from the questionnaire statement, then the total score was sought.

**Table 1.** Respondent Characteristics

Characteristics Respondent				n (N= 272)	%
School	SMA 2 Samboja			68	25
	SMA 3 Penajam Paser Utara			20	7.4
	SMA 9 Balikpapan			184	67.6
Age	Mean	SD	Median	Min	Max
	16.40	0.89	16.00	14.00	19.00

Based on the results of the table above, it was obtained that respondents from SMA 2 Samboja were 68 adolescent females (25%), SMA 9 Balikpapan was 184 (67.6%) and SMA 3 Penajam Paser Utara was 20 adolescent females (7.3%). In this study, the majority of respondents were 16 years old.

**Table 2.** Distribution of Screen Time Frequency and Psychological Distress in Adolescent Females

Variable	n (N=272)	%
<b>Screen time</b>		
Risky	230	84.6
No risk	42	15.4
<b>Psychological Distress</b>		
High risk	130	47.8
Low risk	142	52.2

Based on the results of the study, it was found from 272 adolescent females that 230 adolescent females (84.6%) had risky

Then it is categorized into two, namely high risk (average  $\geq$  score) and low risk (average  $<$  score).

## Ethical Clearance

This research has a research ethics permit issued by the Faculty of Public Health, Universitas Mulawarman with the number 314/KEPK-FK/XII/2024.

## RESULT

Based on the results of the research from 272 respondents, the characteristics of the respondents were obtained which were presented in the form of a table as follows:

The results of the study were obtained from the distribution of the frequency of screen time behavior and excessive psychological distress in adolescent females which are presented in the form of the table below:

screen time behaviors, and 42 adolescent females (15.4%) had screen time behaviors. In this study, students who experienced a

high risk of psychological distress were also obtained, namely 130 adolescent females

(47.8%) and adolescent females at low risk, namely 142 people (55.2%).

**Table 3.** Analysis of The Association Between Screen Time and Psychological Distress Among Indonesian Female Adolescents

Variable	Psychological Distress		Total	P value	OR
	High risk	Low Risk			
<i>Screen Time</i>					
Risky	116 (50,4%)	114 (49,6%)	230	0.041	2,03
No Risk	14 (33,3%)	28 (66.7%)	42		
Total	130	142	272		

Based on the results of the study, it showed a p value of  $< 0.05$  which means that there is a relationship between screen time and psychological distress in high school females. The table also showed that the odds of high-risk psychological distress for the at-risk group was 2,03 times greater compared to that of the non-at-risk group, meaning that adolescent females in the at-risk screen time group was 2,03 times more likely to experience high-risk psychological distress compared to the non-at-risk screen time group.

## DISCUSSION

Excessive use of electronic devices has an impact on a person's mental health. It was found that adolescent females with screen time behaviors are at risk of having an impact on their mental health disorders in this study. A study said that a person who stares at a screen excessively every day is associated with symptoms of hyperactivity, internalization problems, depression, anxiety and having low psychological well-being (Francisquini *et al.*, 2025). A study conducted in Norway showed that adolescents who spent more than 2 hours/day screened more than 2 hours/day were more at risk of developing psychological distress compared to adolescents with screen time  $< 2$  hours/day (Kleppang *et al.*, 2019).

The current phenomenon is found by many adolescents who spend hours staring at

the screens of their electronic devices. Studies stated that women spend more time using social media than men. Women spend more than 10 hours a day on social media (Oslé & Rosales, 2023). High screen time duration affects sleep quality so that it is related to the incidence of sleep disorders in adolescents which has an impact on their mental health (Syilvani *et al.*, 2024).

Adolescent females who spend their time doing screen time are at risk of psychological distress. This is because it is easy for adolescent females to feel dissatisfied with their body appearance so that adolescent females often unconsciously have made comparisons between reality and virtual life on social media (Papageorgiou *et al.*, 2022). A meta-analysis study concluded that intense social media use in adolescent females causes increased stress and anxiety due to the presence of Cyberbullying and unrealistic social expectations (Keles *et al.*, 2020).

Nowadays, most adolescent females have social media such as Instagram, Facebook, X and others. The existence of social media today makes adolescent females always follow the standardization of appearance on social media. This will have an impact on the formation of confidence in the adolescent's body image. Study Rofida & Puspitosari (2020), mentioned that there was a relationship between body image and self-



confidence in adolescent females who actively use social media.

A study said that social media has a negative impact on a person's mental health (Santos *et al.*, 2024). This is because social media can cause dissatisfaction with body image, increase addiction and involvement in cyberbullying, and increase behavior Phubbing and affect a person's emotional negative impact (Zsila & Reyes, 2023). The more time adolescent females spend doing Screen Time on social media, the higher the negative impact that the teenager will get. A study stated that there was a link between high exposure Screen Time in women against mental health problems, namely depression (Kleidermacher & Olfson, 2024).

This study provides an idea that screen time behavior in adolescent females has an effect or is related to their mental health. However, this study also has limitations, namely it has not explored in depth the reasons why they spend time on screen time and this study has not explored more deeply related to the psychological distress felt by adolescent females due to the impact of excessive screen time behavior and cross-sectional design research cannot be used to conclude causal effect. It is hoped that further research can be explored in depth using qualitative methods.

## CONCLUSION AND SUGGESTION

Based on the results of the study, it was found that there was a significant relationship between screen time and psychological distress in high school adolescent females. The higher the screen time behavior, the higher the psychological distress felt by adolescent females. This also shows that the group of adolescent females with excessive screen time is at higher risk of psychological distress compared to the group of adolescents who do not have excessive screen time. This problem is a concern for

schools and parents. There is a need to limit the use of electronic devices in daily life, both at school and at home. This restriction aims to minimize the level of addiction in staring at the screen of electronic devices. In addition, it is necessary to increase literacy for adolescent females so that they have awareness and are wise in using electronic devices. Suggestions for the government to make regulations related to screen time limits for adolescents in schools and home environments and encourage schools to reduce excessive screen use in daily activities. The suggestion for the next researcher is to analyze the psychological changes due to screen time in different age stages and compare the impact of screen time between adolescent females and adolescent boys to understand specific risk factors based on gender.

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## AUTHOR CONTRIBUTION

There are seven authors in this article, namely Alma Feriyanti conducting analysis of research data, manuscript revision, manuscript writing, literature review. Rina Tri Agustini contributed to create a research design and reference, Lies Permana contributed to design the research questionnaire, Nur Rohmah contributed coordinator of licensing for research activities at schools, Annisa Nurrachmawati contributed to the collection and management of research data, Agustin Putri Rahayu

contributed to Handling research administration and Mohammad Fikri contributed to Handling research data and compiling results.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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