

Analysis of the Influence Social Media Usage Intensity on Depression Among Adolescents at High School in Surabaya

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ABSTRACT

Objective: This study aims to examine the influence of social media usage intensity on depression levels among adolescents. Adolescents are a vulnerable age group prone to various psychological issues, including depression, which can be influenced by social media use in the digital era. While social media offers numerous benefits, it can also contribute to social pressure and anxiety. **Method:** This research employed a quantitative approach using the Kolmogorov-Smirnov normality test and simple linear regression analysis. **Results:** The findings indicate a significant relationship between the intensity of social media use and adolescent depression levels, with an F-value of 4.281 and a p-value of 0.042 ($p < 0.05$). In other words, higher intensity of social media usage is associated with an increased likelihood of experiencing depressive symptoms. However, this effect is also influenced by usage patterns, social support, and individual psychological conditions. **Novelty:** These results highlight the importance of regulating adolescent social media use and the need for early intervention to mitigate its negative impact on mental health.

INTRODUCTION

Adolescents are an age group that undergoes important emotional, social and psychological developmental phases. In today's sophisticated era, teenagers are very dependent on the use of social media and technology, both of which have a very important role in every dimension of life. Social media provides many advantages, such as the ability to communicate more easily, share experiences, and build social identity. Social media does offer a lot of convenience, but teenagers also face many problems that can have a big impact on their mental health. One of the problems that many face is the increased social pressure and expectations that arise from excessive use of social media, which can lead to many mental health problems, including depression.

One of the mental health disorders that are often experienced by adolescents is depression. These disorders can affect an individual's feelings, ways of thinking, and behavior, as well as interfering with their ability to perform social and academic activities. According to [1], depression is an affective, cognitive, and somatic disorder. Moodiness, loss of interest, fatigue, sleep disturbances, and negative thoughts about oneself and the future are some of the symptoms of depression.

The [2] reports that as many as 6.2% of Indonesian adolescents aged 15 to 24 years often experience stress or depression, equivalent to 11 million people, making adolescents the age category that most often experience depression. In fact, [3] reported that the prevalence of depression in adolescents reached 14.8% higher than other age groups. Considering the prevalence of depression among adolescents and the findings of

previous research showing the relationship between social media and psychological disorders, it is very possible that some students of Maryam Surabaya High School have tendencies or symptoms of depression. Therefore, conducting additional analysis is essential to understand the condition.

Depression or a tendency toward depression can have a serious impact on adolescents if not treated promptly. Adolescents can become less active individuals in the social environment, have thoughts or actions that hurt themselves and experience a decline in academic and non-academic achievement. All of these things will inevitably ruin their future socially and personally. The intensity of social media use is one of the factors that are now widely highlighted that cause depression in adolescents. Other factors include academic stress, family environment, hormonal changes, and unhealthy social media exposure.

Social media is a place for teens to interact and express themselves, but overuse can have negative effects. Although social media is able to provide many conveniences for its users such as access to information and communication, social media is also inseparable from negative impacts that are quite dangerous if not paid attention to properly such as internet abuse, crime or cybercrime and addiction. Furthermore, social media can contribute to mental health disorders, including depression, low self-esteem and anxiety [4]. Adolescents are often caught up in social comparisons and experience cyberbullying, which can affect their self-perception and mental health [5]. In this context, adolescents are the most vulnerable group to mental health disorders, especially since they experience many emotional and psychological changes [6].

The intensity of social media use is defined as the length of time an individual explores or uses social media for a certain period of time, usually one day. According to the Indonesian Internet Service Providers Association, there are 191 million people in Indonesia who are active in social media in 2022. With internet penetration of 99.16%, almost all adolescents in Indonesia are exposed to social media, showing how important it is to know the huge impact that social media has on their mental state. Previous studies have shown that social media use is linked to the likelihood of depression due to the fact that adolescents are exposed to unreasonable social standards, negative interactions and constant social comparisons.

According to previous research, the more social media is used, the more likely you are to experience depression. This is because adolescents are exposed to unrealistic social standards, negative interactions, and constant social comparisons. Previous research, such as that conducted by [7], found that 38.8 percent of respondents experienced mild depression and 66.3 percent reduced the intensity of social media use. Another study conducted by [8] produced a significant but not strong correlation between social media use and depressive symptoms, suggesting that other factors may also contribute.

This study has differences compared to previous studies, especially in terms of the population studied. If the previous research was conducted in another location, this study focused on students of Maryam Surabaya High School, who had never been the

subject of a similar study. Surabaya is the number 2 big city in Indonesia so it is not surprising that this city has a dynamic and competitive life. This condition makes teenagers in the city more vulnerable to social pressures that have the potential to trigger psychological problems, including depression, especially due to their high connection to social media and technology. Crowded urban environments as well as high demands can have an impact on adolescents' psychological or mental health, especially if social media use is not controlled. Therefore, Surabaya is the right location to examine the influence between the intensity of social media use and the level of depression. In addition, the results of the study were able to provide broader knowledge related to the mental health conditions of adolescents in urban environments.

This study aims to analyze the influence between the intensity of social media use and adolescent depression at Maryam High School Surabaya. Based on the objectives, this study determined:

- The zero hypothesis (H0) is that there is no significant influence between the intensity of social media use and the level of adolescent depression at Maryam High School Surabaya.
- An alternative hypothesis (H1) says that there is a significant influence between the intensity of social media use and the level of adolescent depression in the school.

RESEARCH METHOD

1. Research Design

Quantitative correlational is the research method used in this study, where this study aims to examine random samples using quantitative research tools to test hypotheses. The variables tested in this study were the intensity variable of social media use as a dependent variable (X) and the depression variable as a dependent variable (Y). The purpose of this study is to review whether there is a correlation between the intensity of social media use and adolescent depression at Maryam High School in Surabaya or not.

2. Population/Sample

The students of Maryam Surabaya High School, which totaled 100 students, were the population determined by the researcher in this study. The selected sample determination technique is saturated sample, where the technique allows the entire population to be used as a sample [9].

3. Research Instruments

This study involved two scales, namely the Social Media Use Intensity Scale (SIPMS) and the Beck Depression Inventory-II (BDI-II) Scale. The scale used is the Likert scale, which is designed to measure individual behavior, opinions, and perceptions of a social phenomenon [10]. The Likert scale consists of a statement of attitude towards an object. This scale uses several question items to measure individual behavior through four response options to each question, namely agree, disagree, strongly disagree and strongly agree. The Social Media Use Intensity Scale (SIPMS) used is the adoption scale

from [11] research with a reliability value of $rx'x' = 0.625$ which contains several unfavorable and favorable questions, namely attention (content) I feel uneasy if I play social media for more than 4 hours, appreciation (features) in my opinion, according to Sata there are a lot of *benefits* that can be obtained when using social media, (duration) sometimes I feel bored playing social media, (frequency) I often update daily activities to social media. The scale has 25 questions that can be accessed at the link (<https://bit.ly/4lfHh1d>). The Beck Depression Inventory-II SCALE (BDI-II) is an adoption scale from the research of Ginting with a reliability value of $rx'x' = 0.600$ which consists of aspects (emotions) I do not feel sad, (cognitive) I feel failure, (motivation) I have no thoughts to commit suicide, (vegetative and physical) my appetite has not changed (not worse) than usual. The scale has 20 questions that can be accessed at the link (<https://bit.ly/4ijuYOZ>).

4. Research Procedure

The research process begins by conducting a survey of the parties concerned, in this case students in the school environment, identifying the problems that occur. This study focuses on whether there are problems regarding the intensity of social media use that can affect the level of adolescent depression. This is associated with how social media used excessively can have a significant impact on students' psychological health, especially depression. The data of this study was analyzed using a simple multiple linear regression technique with the aim of testing the correlation between free and bound variables. Furthermore, testing the variable of the intensity of social media use on students' depression, which is then tested with a likert scale and the results will be tested with the JASP application, after testing then the results will be discussed with the theories that have been taught.

5. Data Analysis Techniques

Multiple linear regression analysis with the JASP for Windows program is the data analysis technique used in this study. The goal was to determine the correlation between the independent variable (X), namely the intensity of social media use, and the dependent variable (Y), namely depression, with the normal distribution of the X and Y variables. Another reason for the choice of this technique is because the research data has a normal distribution, the research variables show a linear relationship, and the research subjects are homogeneous.

RESULTS AND DISCUSSION

Results

1. Assumption Test

This analysis tested depression with the Kolmogorov-Smirnov method for normality. The results showed that the p-value for depression was 0.128. In the normality test, the p-value is above 0.05, indicating that the data is considered to be normally distributed. This is because there is not enough evidence to reject the zero hypothesis that

the data comes from a normal distribution. This is because there is no strong evidence to refute or dismiss the zero hypothesis that the data comes from normally distributed data.

Table 1. Uji Normalitas Kolmogorov-Smirnov

Fit Assessment		
<i>Fit Statistics</i>		
Test	Statistic	p
Kolmogorov-Smirnov	0.133	0.128

This analysis tested depression with the Kolmogorov-Smirnov method for normality. The results of the study showed that the p value for the intensity of social media use was 0.893. In normality testing, this value > 0.05 which means that the data is considered to be normally distributed. This is because there is no strong evidence to refute or dismiss the zero hypothesis that says that data comes from data that is normally distributed.

Table 2. Kolmogorov-Smirnov Normality Test

Fit Assessment		
<i>Fit Statistics</i>		
Test	Statistic	P
Kolmogorov-Smirnov	0.065	0.893

2. Hypothesis Test

Based on the results of the statistical test, F showed significance with $F = 4.281$ and $p = 0.042$ ($p < 0.05$). These results show that H_0 is rejected and H_1 is accepted, so that the independent variable, namely the intensity of social media use, is a significant predictor in influencing depression. The sig value in this study is 0.042 ($p < 0.05$) which indicates that the regression model used is able to significantly affect the dependent variable.

Table 3. Simple Linear Regression Test based on F value

<i>ANOVA</i>						
Type		Sum of Squares	Df	Mean Square	F	p
M ₁	Regression	621.259	1	621.259	4.281	0.042
	Residual	11.029.728	76	145.128		
	Total	11.650.987	77			

Note. M₁ includes Social Media Use Intensity

Note. The intercept model is omitted, as no meaningful information can be shown.

Based on the regression test results shown in the table "Model Summary - Depression", the analysis shows that the baseline model (M_0) without the social media use intensity variable has an R^2 value of 0.000, which indicates that this model cannot explain the variation in the BDI score. After including the social media use intensity variable in the M_1 model, the R-value increased to 0.231 with R^2 being 0.053, which means that about 5.3% of the variance in the depression score could be explained by intensity. Although this increase was relatively small, there was a decrease in the RMSE value from 12,301 to 12,047, which shows that the model with the social media usage intensity variable provides a slight improvement in prediction accuracy compared to the model without the variable. This indicates that the intensity of the

Table 4. Simple Linear Regression Test and Correlation Test
Model Summary - Depression

Type	R	R^2	Adjusted R^2	RMSE
M_0	0.000	0.000	0.000	12.301
M_1	0.231	0.053	0.041	12.047

Note. M_1 includes Social Media Use Intensity

The results of simple linear regression analysis found that the regression equation obtained was $Y = 2.001 + 0.287x$. In this equation, the constant value of 2.001 indicates that when the intensity x is zero, the predicted value for the dependent variable Y is 2.001. However, with a value of $p=0.803$, this constant is not statistically significant, so its interpretation needs to be done carefully. Meanwhile, the regression coefficient of 0.287 shows that if every one unit increase in the intensity of x will automatically optimize the prediction of the dependent variable Y by 0.287. With values $t=2.069$ and $p=0.042$, the relationship between intensity and statistically significant dependent variables is at a confidence level of 95%. This indicates that the intensity of x has a significant positive impact on Y , so the increasingly intense use of social media will increase the prediction value.

Y = Depression

c = Kostanta Value

b = Social Media Use Intensity Coefficient

x = Social Media Use Intensity

This shows that the increasingly intense use of social media will be able to optimize the level of stress experienced. Thus, the increase in social media is able to positively affect the level of depression, so that any additional intensity of social media use will produce a depression value.

Table 5. Simple Linear Regression Test Coefficient

<i>Coefficients</i>					
Type		Unstandardi zed	Standar d Error	Standardiz ed	t p
M ₀	(Intercept)	18.321	1.393		13.15 4 <.00 1
M ₁	(Intercept)	2.001	8.005		0.250 0.803
	Intensity of Social Media Use	0.287	0.139	0.231	2.069 0.042

Discussion

Based on the results of the study, it was shown that the intensity of social media use was able to positively affect the level of depression significantly, with a correlation value ($F = 4.281$ and $p = 0.042$ $p < 0.05$). These findings show that adolescents who use social media regularly are at greater risk of depression, while adolescents who use social media with minimal intensity are known to have lower rates of depression. The results of the study support the research hypothesis.

Previous studies support these findings. [12] found a significant correlation of 0.001 between adolescent depression and the intensity of social media use, which also showed a strong correlation of the two variables. [13] found similar findings, with a p value of 0.03 for depression related to social media use. In addition, a literature review by [14] found that 76.47% of the 17 journals studied showed a correlation between social media use and depression. On the other hand, 23.53% of other journals did not find such a relationship.

Several previous studies have also shown that the correlation between social media use and depression occurs unstable, but is variable and influenced by various factors. For example, a study conducted by [15] stated that the relationship between social media use and mental well-being is complex and can be influenced by the time of use, social context, and individual characteristics. [16] mentioned that there is a correlation between social media use and depression. A study conducted by [17] found that increased social media use in the long term can increase the risk of depression, especially among adolescent girls who are more vulnerable to social comparisons and cyberbullying. [18] conducted a

meta-analysis of this study and found that excessive use of social media correlates with higher rates of depression but this correlation is imprisoned.

Certain factors can affect the intensity of social media use as well as its impact on depression. Social media usage habits are influenced by many variables, including age, gender, financial status, and access to the internet. According to [19], having multiple social media accounts can be time-consuming and reduce opportunities to interact directly with others, which can negatively impact mental well-being. In addition, adolescents' mental states can also be affected by cyberbullying, increased feelings of insecurity, and anxiety that arise due to excessive use of social media [20]. Therefore, although this study found that the intensity of social media use can significantly affect depression, other factors such as social media use patterns, social support, and individual psychological factors must also be considered to better understand the dynamics of these relationships.

Although this study is able to provide knowledge and insight related to the influence of social media use with depressive conditions in adolescents, there are still some limitations/shortcomings that need special attention, namely this study was only carried out in one school (SMA Maryam Surabaya), so the results cannot be generalized to the adolescent population in other secondary schools. It is therefore suggested that future research could use a more varied and broad sample by covering schools in different regions. Then, the number of sexes in respondents was not balanced between women and men, so further research is expected to sample with more balanced proportions to allow for more in-depth sex-based analysis. Furthermore, the information obtained from the questionnaire did not fully reflect the respondent's original circumstances or perspective. This can be caused by differences of views, levels of understanding or openness in providing answers that have the potential to affect the validity of the data.

CONCLUSION

Fundamental Finding : The results of this study show that the intensity of social media use can affect adolescent depression, where social media used more intensely will have a negative impact on adolescent psychological health, especially depression. **Implication :** Based on the findings of the study, the research hypothesis is accepted that excessive use of social media contributes to the risk of depression. However, other variables such as usage patterns, social support and an individual's psychological condition can also affect whether those influences are stronger or weaker. As a practical measure, adolescents are advised to be more careful in using social media, such as limiting the amount of time they spend and engaging more in in-person social interactions to maintain a mental health balance. Parents are also expected to be more active in supervising and accompanying their children when they use social media, as well as informing them of its negative effects. **Limitation :** In order for the results of the research to be more generalized, further research must use a more varied and wide

sample. **Future Research :** In addition, future research could consider moderation factors such as gender, socioeconomic circumstances or more specific social media usage patterns to understand their impact more deeply.

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