JURNAL KEDOKTERAN DIPONEGORO
(*DIPONEGORO MEDICAL JOURNAL*)
Online : http://ejournal3.undip.ac.id/index.php/medico
E-ISSN : 2540-8844
DOI : 10.14710/dmj.v13i4.41836
JKD (DMJ), Volume 13, Number 4, July 2024 : 167-172

THE RELATIONSHIP BETWEEN SOCIAL MEDIA ADDICTION AND SELF-ESTEEM IN MEDICAL STUDENTS OF DIPONEGORO UNIVERSITY

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ABSTRACT

Background: In the modern era, social media has become a necessity in carrying out daily activities. Playing social media too often can have negative effects. These negative effects include addiction. Social media addiction can interfere with daily activities and affect the level of self-esteem. **Objective:** To prove the relationship between social media addiction and self-esteem among medical students at Universitas Diponegoro. **Methods:** This research was an analytical observational investigation utilizing a cross-sectional methodology. The study was carried out over a span of one month, involving 90 participants from the medical students batch 2022 at Universitas Diponegoro. The questionnaires used were the Social Media Addiction Scale-Student Form (SMAS-SF) and Rosenberg Self-Esteem Scale (RSES). The assessment of the correlation between social media addiction and self-esteem using the Spearman test. **Results:** 2.2% of respondents had a very low level of social media addiction; 52.2% had a low level; 44.4% had a high level; and 1.1% had a very high level. In terms of self-esteem, the data revealed that 84.4% of respondents had a high level of self-esteem, while 15.6% had a low level. In the correlation test between demographic factors, social media addiction, and self-esteem, an insignificant relationship was found with a p-value greater than 0,05. Meanwhile, a significant relationship was found in the correlation test between social media addiction and the level of self-esteem (p=0.001, r=-0.335). **Conclusion:** A significant relationship exists between social media addiction and the level of self-esteem among medical students at Diponegoro University.

Keywords: *addiction, social media, self-esteem, medical*

BACKGROUND

Social media is a platform that facilitates user activities and associations.[1] As of January 2022, there are 191 million Indonesians who are active users of social media, according to a survey by We Are Social from a world survey institute based in England.[2] The number has increased by 12.35% compared to the previous year, which means it is now at 170 million.[2] As a student, you are likely familiar with social media and its many benefits for supporting education.[3] However, it's crucial to recognize that excessive use of social media can have a negative impact on your thoughts, feelings, and self-esteem.[4]

Self-esteem refers to the positive or negative feelings resulting from self-evaluation.[5] Social media users often feel happy about others' achievements but also realize their shortcomings, leading to decreased self-esteem.[6] The reciprocal process can increase self-esteem, such as receiving positive responses to uploaded content.[7]

Using social media as a routine can lead to addiction and negatively impact a user's psychological condition.[8] Each time a person uses their preferred social media app, it triggers a surge of dopamine signals in the brain.[9] The increase in dopamine caused by social media addiction can damage the prefrontal cortex and impact an addict's quality of life.[10] Research shows that a person's level of self-esteem affects how much it fluctuates based on success or failure.[11] The issues mentioned frequently arise from social media addiction and comparison to others.[6]

Those who use social media for 5-6 hours a day are considered addicted.[12] Social media addiction can negatively affect emotional and cognitive functions, potentially leading to low self-esteem.[13–15] When someone's emotional and cognitive states are disrupted, it can negatively impact their self-esteem and potentially lead to additional mental health issues.[16]

METHODS

This research was an analytical observational investigation utilizing a cross-sectional methodology

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which was conducted from April until May 2023. Ethical clearance for this study was obtained from the Health Research Ethics Commission of the Faculty of Medicine Diponegoro University.

The samples were Diponegoro University medical students batch 2022 who met the inclusion and exclusion criteria. The criteria used were active university students, willing to be research subjects, willing to sign a letter of consent, using a smartphone, having at least one active social media account, and not diagnosed with mental disorders. The sampling method used was simple random sampling and 90 samples were obtained.

SMAS-SF (Social Media Addiction Scale-Student Form) was used to score the level of social media addiction and RSES (Rosenberg Self Esteem Scale) was used to score the level of self-esteem. Questionnaires were spread through Google Forms, and then descriptive analysis and correlation tests were conducted. Correlation test using Spearman test.

RESULTS

Table 1. Characteristics of respondents

Variable		n	%
Age			
	17	2	2,2
	18	34	37,8
	19	48	53,3
	20	6	6,7
Gender			
	Male	18	20
	Female	72	80
Residence			
	Boarding house	77	85,6
	Home (with parents)	13	14,4
GPA			
	Good	3	3,3
	Satisfying	14	15,6
	Very satisfying	44	48,8
	Cumlaude	29	32,2
History of mental disorder			
	No	90	100
	Yes	0	0

Based on the data obtained, the majority of respondents are female with the age of 19 years. The gender of male respondents was 20% and females were 80%. The status of residence shows that the majority of respondents live in boarding houses with a percentage of 85.6%. The most of respondents had a very satisfying GPA was 48.9%, and no respondents were found to have a history of mental disorders.

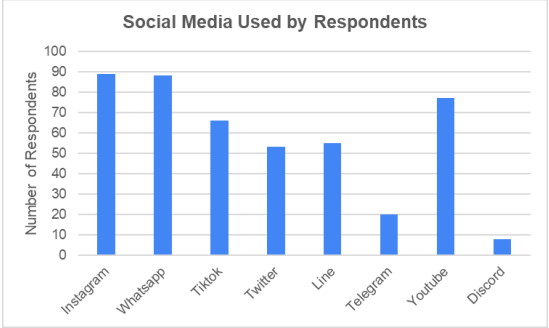

Figure 1. Data of social media used by respondents

From the results of this study, the most common application used by respondents was Instagram® as many as 89 respondents. Whatsapp® users were 88 respondents. YouTube® users were 77 respondents. Tiktok® users were 66 respondents. Twitter users were 53 respondents. Line® users were 55 respondents. Telegram® users were 20 respondents. Discord® users were 8 respondents.

Table 2. Respondent's social media addiction level

Social Media Addiction Level	n	%
Very low	2	2,2
Low	47	52,2
High	40	44,4
Very high	1	1,1
Total	90	100

Table 2 shows that the social media addiction level of most respondents is low with a percentage of 52.2%. There were 44.4% of respondents with high levels of social media addiction, 2.2% of respondents had very low levels of social media addiction, and 1.1% of respondents had very high levels.

Table 3. Respondent's self-esteem level

Self-esteem Level	n	%
Low self-esteem	14	15,6
High self-esteem	76	84,4
Total	90	100

The majority of respondents had high self-esteem. There were 84,4% of respondents had a high level of self-esteem, and 15,6% of respondents had a low level of self-esteem.

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Based on Table 4, the three demographic factors (gender, residence, and GPA) obtained p>0.05 which means that demographic factors do not have a significant relationship with addiction of social media.

Table 4. The relationship between demographic factors and social media addiction

Variable	Social Media Addiction Scale-Student Form		
	p	r	N
Gender	0,126	0.163	90
Residence	0,301	-0,110	90
GPA	0,309	-0,108	90

p= significance r= correlation coefficient

Table 5. The relationship between demographic factors and self-esteem

Variable	Rosenberg Self-Esteem Scale		
	p	r	N
Gender	0,042	-0.215	90
Residence	0,403	0,089	90
GPA	0,947	-0,007	90

p= significance r= correlation coefficient

Table 5 shows that only the gender factor has a significant relationship with the level of self-esteem, which has p=0.042. The factors of residence obtained p=0.403 and GPA obtained p=0.947 which means that there is no significant relationship with self-esteem.

Table 6. The relationship between social media addiction and self-esteem

Social Media Addiction Level	Self-esteem Level		p	r
	Low	High		
Very low	0	2	0,001	-0,335
Low	2	45		
High	12	28		
Very high	0	1		

p= significance value r= correlation coefficient

Based on the Spearman test analysis in Table 6, the p-value was found to be 0.001. This value shows a significant relationship. The correlation coefficient value is -0.335, which means that the level of correlation between addiction of social media and the level of self-esteem is weak. The correlation coefficient in the above results is negative, so the relationship between the two variables is opposite. Therefore, it can be interpreted that the higher the level of social media addiction will result in a decrease in the level of self-esteem.

Based on Table 7, the highest average component of social media addiction is virtual communication, which is 41.1%. Meanwhile, the lowest component of social media addiction is virtual tolerance. The component of social media addiction most experienced by respondents with low self-esteem and high self-esteem levels is virtual communication.

Table 7. Components of social media addiction

Components	n	%	Low		High	
			n	%	n	%
Virtual tolerance	2	2,2	0	0	2	2,2
Virtual communication	37	41,1	9	10	28	31,1
Virtual problem	24	26,7	3	3,3	21	23,3
Virtual information	27	30	2	2,2	25	27,8
Total	90	100	14	15,6	76	84,4

Table 8. The relationship between each component of social media addiction dan self-esteem

Components of social media addiction	Self-esteem Level		p	r
	Low	High		
Virtual tolerance	0	2	0,013	-0,260
Virtual communication	9	28	0,001	-0,352
Virtual problem	3	21	0,081	-0,185
Virtual information	2	25	0,384	-0,093

p= significance value r= correlation coefficient

Of the four aspects, the aspects that have a significant relationship with the level of self-esteem are virtual tolerance with a p-value=0.013 and virtual communication with a p-value=0.001. Meanwhile, the other two aspects, namely virtual problems and virtual information, did not have a significant relationship with self-esteem because the p-value was> 0.05.

DISCUSSION

In this study, 2.2% of respondents were found to have a very low level of social media addiction, 52.2% had a low level of social media addiction, 44.4 % had a high level of social media addiction, and 1.1% had a very high level of social media addiction. Social media

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addiction cannot be separated from the many types of social media with various features and functions.[17,18] The results of this study also obtained data on the applications most used by respondents. The data can be seen in Figure 1. In addition, several factors can affect social media addiction, namely gender, psychological conditions, goals, and time.[19] Social media addiction is also associated with gaming addiction, where open-world games are also included in one type of social media.[14,17]

This study also obtained the average components of social media addiction that affect self-esteem. The data can be seen in Table 7. The highest aspect of social media addiction is virtual communication, which is 41.1%. It happens because interaction through social media is more preferred than direct interaction. The lowest aspect is virtual tolerance, which means that individuals find it difficult not to connect with social media to achieve satisfaction.[20]

Meanwhile, data on the level of self-esteem as many as 15.6% had a low level of self-esteem and 84.4% had a high level of self-esteem. The level of self-esteem can be affected by many factors, including social background, parenting, and subject characteristics. Social history consists of social class, religion, and parents' occupation; parenting patterns consist of parenting values, parents' marital history, parenting behavior, and the roles of father and mother; and subject characteristics consist of physical conditions, general abilities, attitudes, health conditions, self-worth, social relationships, cognitive and experience.[21] A person's self-esteem also increases over time, in early adulthood can control itself and its environment, at that age confidence increases with what it does so that it considers itself valuable.[11]

The only demographic factor that has a significant relationship with the level of self-esteem is gender. Meanwhile, other factors didn't have a significant relationship with social media addiction level and self-esteem level. These results are similar to the results of previous research conducted by Handikasari, et al. which states that there is no significant relationship between gender and GPA with the intensity of social media use.[13] In addition, the use of social media in adolescents tends to get pleasure and satisfaction from the recognition of others.[22]

The study of Andreassen CS, et al. stated that academic grades are not related to self-esteem level.[8] A person's level of education also cannot be said to affect the level of self-esteem because self-esteem arises from feelings and thoughts within oneself.[8] Meanwhile, in this study, it was found that there was a relationship between gender and the level of self-esteem. It is different from previous studies that have existed. The researcher predicted this could happen because there were more female students than male students and the gender distribution of the sample was unequal.

The relationship between social media addiction and self-esteem shows a significant relationship. The result of the correlation test, the p-value is 0.001, which means there is a significant relationship. The correlation coefficient value obtained is -0.335, which means it shows a negative correlation where a higher level of social media addiction will result in a decrease in the level of self-esteem.

The results of this study also found a relationship between aspects of social media addiction and self-esteem. Aspects that have a significant relationship with self-esteem level are virtual tolerance with a p-value = 0.013 and virtual communication with a p-value = 0.001.

The existence of a significant relationship between the use of social media and the level of self-esteem is by previous research by Ardiany M.F. and Ardi R. (2022). In his research, he said that initially in playing social media by looking at other users' posts, they will feel happy. However, if they play for too long, they will evaluate themselves and realize that there are shortcomings in themselves that cause low self-esteem.[23] Similar research conducted by Alfasi Y also states that the use of social media also affects self-esteem levels.[24]

As per the theory, social media addiction can affect the release of dopamine which stimulates the desire to continue playing and stay awake as a form of reward system.[25,26] This reward system pathway consists of a serial circuit connecting the ventral tegmental area, nucleus accumbens, and ventral pallidum via the mid-forebrain bundle.[27] Cells that are located in the VTA will send stimuli rostrally to limbic and cortical areas through the medial forebrain bundle, at the level of the NAc, the fibers diverge to reach their terminal targets, then this innervation will be divided into two, namely mesolimbic dopamine neurotransmitters going in a

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more dorsal direction to the striatum and mesocortical dopamine neurotransmitters going to the prefrontal cortex.[27] Dopamine travel to the prefrontal cortex can influence emotions and thoughts.[28] The mesolimbic pathway of dopamine that goes to the striatum also plays a role in the processing and regulating of emotions.[26,27,29] Meanwhile, the state of wakefulness in people who are addicted to social media is caused by the release of norepinephrine at the RAS (Reticular Activating System) in the mesencephalon.[26,29]

Thus, similar to the results of this study, the longer playing social media will cause negative feelings that can result in low self-esteem.

CONCLUSION

A significant relationship was found between social media addiction and self-esteem in medical students of Diponegoro University.

ETHICAL APPROVAL

An ethical clearance was obtained from the Health Research Ethics Commission (KEPK) Faculty of Medicine UNDIP with No.112/EC/KEPK/FK-UNDIP/IV/2023.

CONFLICT OF INTEREST

The authors confirm that there is no conflict of interest in this study.

FUNDING

All research funding comes from the author.

AUTHOR CONTRIBUTIONS

Conceptualization: DMS, TAS; Methodology: DMS, FS, TAS; Data analysis: DMS; Data collection: DMS; Source of funds: DMS; Writing the original draft: DMS; Review and edit: DMS, FS, TAS; Supervision: FS, TAS.

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