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Social Media Use Behavior and Social Media Disorder Among Faculty of Public Health Students During the COVID-19 Pandemic

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Abstract

Excessive use of social media can lead to vulnerability to social media disorder, which is significantly related to the trend of mental health problems among college students. This study aimed to assess the prevalence of social media disorder among college students and to determine the relationship between the number of social media accounts, the total duration of social media use, and social media disorder. This cross-sectional study collected data through an online survey of 201 college students from the class of 2021 in the Faculty of Public Health, Universitas Indonesia. This study used the Social Media Disorder scale and univariate and bivariate analysis to analyze the data. The prevalence of social media disorder was 23.9%; 93% of students were classified as high-duration social media users, and 58.2% had more than 10 accounts. Statistically, there was a significant relationship between the number of accounts (p -value = 0.045) and social media disorder. However, there was no significant relationship between the duration of social media use and social media disorder (p -value = 0.560). As a suggestion, the self-regulation factor must be considered an independent variable in predicting social media disorder among college students.

Keywords: college student, COVID-19, mental health, social media, social media disorder

Introduction

Social media users in Indonesia in January 2021 reached 170 million (62%) out of a total population of 274.9 million.¹ In Indonesia, college students are the group with the highest penetration of social media users.² The GlobalWebIndex report shows that Gen Z (e.g., the generation born between 1997 and 2004), including college students, mainly use social media for entertainment.² As social media use increases among college students, digital well-being and mental health have become important issues since 2019.²

In the last five years, between 2017 and 2022, which includes the COVID-19 pandemic, various studies worldwide have shown that social media disorder (SMD) is significantly related to the trend of mental health problems among college students.³⁻⁹ Excessive use of social media may lead to SMD.¹⁰ The negative impacts of SMD that may occur among emerging adults are decreased mood, decreased life satisfaction, feelings of loneliness, decreased quality of life, reduced concentration, cyberbullying, decreased sleep quality, anxiety disorders, and increased fear of missing out (FoMO).³⁻⁹

A study by van den Eijnden, *et al.*, explains that there is no official definition of SMD because most previous studies have examined the disorder based on social media platforms and have not used a common term.¹² However, they concluded that SMD is present if at least five of the nine criteria for interference (preoccupation, tolerance, withdrawal, persistence, displacement, problem, deception, escape, and conflict) in individuals are found in the past year.¹² These criteria refer to Internet gaming disorder, which is part of the Internet addiction construct officially recognized in the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-V).¹⁰

College students are the largest users of social media and are at risk of experiencing SMD. They are motivated to use social media to interact, be entertained, and seek information.¹¹ The GlobalWebIndex report shows that since the COVID-19 pandemic, college students' main activity at home is using social media (52%), and the average use per day was 2 hours 41 minutes.² Moreover, the average number of social media accounts per person in Indonesia was 10.5, which was higher than the Asia Pacific overall, with 9.3 accounts per person.²

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However, there are few studies on SMD in Indonesia. Some studies have explored Internet addiction, but not SMD specifically. The Faculty of Public Health Universitas Indonesia (FPH UI) students took distance learning in March 2020 because of the COVID-19 pandemic. This condition increased students' intensity of social media use, making them vulnerable to SMD. Therefore, it is necessary to investigate the SMD situation at the FPH UI to determine the magnitude of the problem and the preventive measures that need to be considered. The faculty concerns on about public health issues, including mental health, and also is responsible for creating an academic environment conducive to mental health, even in distance learning. This study, therefore, aimed to assess social media use behavior, the prevalence of SMD, and determine the relationship between the number of social media accounts and duration of social media use and SMD among students.

Method

The conceptual framework of this study is visualized in Figure 1. The independent variables were the respondents' characteristics, motivation to use social media, duration of social media use, and the number of active social media accounts. The dependent variable was SMD. This study used a cross-sectional design with a quantitative approach. The purpose of using a cross-sectional design with an online survey in this study was to assess the prevalence of the respondents' characteristics, SMD, and motivations for using social media with univariate analysis and to determine the relationship between the number of social media accounts and the duration of social media use and SMD. Bivariate analysis was carried out with the Pearson correlation and a Chi-square test to determine the relationship between the duration of social media use and the number of accounts with SMD in students.

The samples measured in this study used the formula of hypothesis tests for two population proportions, and the minimal sample was 118 students.¹³ The sampling technique used was non-probability purposive sampling. The sample population was the class of 2021 of FPH UI undergraduate students. A total of 201 respondents completed the online survey. Data was collected by distributing the online questionnaire via the WhatsApp and Line platforms using a self-administered method in September 2021.

The instrument used to measure SMD was the Social Media Disorder Scale. The SMD Scale has nine questions, allowing two answers: yes (1) and no (0). If the score was ≥ 5 , it was categorized as SMD.¹⁰ This study adopted the SMD Scale instrument, which was translated into the Indonesian language and tested for validity and reliability by Dewi and Lestari.¹⁴ Dewi and Lestari

conducted a validity and reliability test for the Indonesian version of the SMD instrument with 207 adolescents in the Special Capital Region of Jakarta, Indonesia, resulting in a Cronbach's alpha of 0.734 and an r-value of 0.513–0.614.¹⁴ These results indicated a good validity and reliability of the Indonesian version of the SMD Scale.¹⁴ Therefore, this study no longer conducted validity and reliability tests.

Results

As shown in Table 1, most respondents are female (92%) and aged 18 years (63.2%). The social media platforms all respondents used are WhatsApp, YouTube, and Line. Instagram and Twitter are also very popular (Table 2). Most respondents are high-duration users

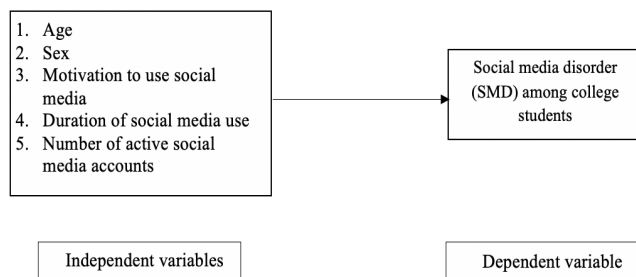


Figure 1. Conceptual Framework

Table 1. Respondent Characteristics (n = 201)

Variable	Category	n	%
Age	16	3	1.5
	17	31	15.4
	18	127	63.2
	19	38	18.9
	20	2	1
Sex	Female	185	92
	Male	16	8

Table 2. Social Media Use (n = 201)

Variable	Category	n	%
Social media platform	WhatsApp	201	100
	YouTube	201	100
	Line	201	100
	Facebook	114	56.7
	Instagram	192	95.5
	TikTok	102	50.7
	Twitter	168	83.6
Duration of social media use	Low (<3 hours per day)	14	7
	High (≥ 3 hours per day)	187	93
Number of active accounts	Low (<10)	84	41.8
	High (≥ 10)	117	58.2
Motivation to use social media	Interaction	66	32.8
	Entertainment	62	30.9
	Distance learning	40	19.9
	Seeking information	33	16.4

(93%) with a high number of active accounts (58.2%). Two primary motivations for using social media are interaction (32.8%) and entertainment (30.9%).

The prevalence of SMD in this study was measured with the SMD Scale. The SMD Scale has nine questions with two answers: yes (1) and no (0). Out of nine questions, if the yes answers were <5, it was categorized as not SMD, and if the yes answers were ≥5, it was categorized as SMD. The prevalence of SMD among the respondents was 23.9% (Table 3).

Table 4 shows that the number of students with SMD categorized as having a high duration of social media use was 24.1%. The relationship between the duration of social media use and SMD was analyzed using categorical data and a Chi-square test to determine the correlation. As shown in Table 4, there was no statistical relationship between the duration of social media use and SMD (p-value = 0.560).

The relationship between the number of active social media accounts and SMD was analyzed using numerical data and the Pearson correlation test to determine the correlation. Table 5 shows a statistically significant relationship between the number of active social media accounts and the SMD score (p-value = 0.045). Moreover, the relationship had moderate strength and a positive pattern (r-value = 0.141). This means the greater the number of active social media accounts, the higher the SMD score.

Discussion

The conceptual framework of this study is visualized in Figure 1. The independent variables are the respondents’ characteristics, motivation to use social media, duration of social media use, and number of active social

media accounts. The dependent variable is SMD. Based on the framework, the two hypotheses of this study are that (1) there is a relationship between the duration of social media use and SMD, and (2) there is a relationship between the number of social media accounts and SMD. However, duration and the number of social media accounts are not the only factors affecting SMD. Other variables affecting SMD include self-regulation, the need to belong, parental function, and so forth.⁷⁻¹⁰ This study focused on the two variables of the duration of social media use and the number of social media accounts due to the follow-up of the two intervention studies with limited times.

Other than the duration of social media use and the number of social media accounts, this study also assessed motivation for using social media based on the uses and gratification theory. Motivation in this study was divided into four categories: distance learning, seeking information, entertainment, and interacting. Three of these four motivations were based on Karimi, *et al.*,’s study, that found three motivations for social media use in students based on the theory.¹¹ The first motivation is cognitive need, translated into seeking new information and learning new things in this study. The second and third motivations are affective and social needs, stated as seeking entertainment, such as listening to music, watching videos, and interacting with others. The fourth

Table 3. Prevalence of Social Media Disorder (n = 201)

Variable	Category	n	%
Social media disorder	Not social media disorder (score <5)	153	76.1
	Social media disorder (score >5)	48	23.9

Table 4. Relationship Between Duration of Social Media Use and Social Media Disorder

		Social Media Disorder						OR (95% CI)	p-value
		Not SMD		SMD		Total			
		n	%	n	%	n	%		
Duration of social media use	Low (<3 hours per day)	11	78.6	3	21.4	14	100	1.162 (0.310–4.349)	0.560
	High (≥3 hours per day)	142	75.9	45	24.1	187	100		

Notes: SMD = Social Media Disorder, OR = Odds Ratio, CI = Confidence Interval

Table 5. Relationship Between the Number of Active Social Media Accounts and Social Media Disorder

Variable	Mean (SD)	r	n	p-value
Number of active account	9.70 (3.854)	0.141	201	0.045
Social media disorder score	3.18 (1.862)			

Note: SD = Standard Deviation

motivation that was not included in Karimi, *et al.*,’s study was distance learning. This was explored because FPH UI has been running a distance learning since the COVID-19 pandemic in 2020.

The results showed that WhatsApp, YouTube, and Line were part of the respondents’ daily lives. Hootsuite reported that WhatsApp and YouTube were Indonesia’s most widely used social media and video streaming applications in January 2021, with an average monthly use of up to 30.8 and 25.9 hours, respectively.¹ Other platforms with a high percentage of users are Instagram and Twitter. The students used these three platforms (WhatsApp, YouTube, and Line) mostly for interactions related to distance learning, such as group assignments, communication, and coordination. Another motivation was seeking entertainment, most likely received from YouTube and Instagram. All these motivations led the students to become high-duration users (more than three hours per day), and they had many active accounts (≥ 10 accounts).¹ Moreover, the number of active accounts in this study was higher than the average number of active accounts per person in the Asia Pacific.²

The prevalence of SMD was 23.9% among the students in the FPH UI class of 2021. A previous study found that the prevalence of SMD among the students of the FPH UI class of 2018–2020 was 17.4%.¹⁵ This implies that newer students had more SMD experience than older students. In this study, the data collection was carried out when the respondents had just started college. Hence, they had a break of about two months between senior high school graduation and college orientation. During the long break and in the pandemic era, they most likely spent most of their time at home. In addition, if they did not have good self-regulation and healthy relationships with their family, this situation could stimulate them to engage more with social media and become vulnerable to SMD.^{16,17}

Students, as a category of emerging adults, are very susceptible to Internet addiction.¹⁸ This is because, in young adulthood, the prefrontal and limbic cortex function is still not balanced, thus encouraging impulsive behavior.¹⁸ In addition, students as young adults desire to learn to self-actualize, form self-identity, and have a perspective on the importance of peer relationships.¹⁸

This study found no statistical relationship between the duration of social media use and SMD (p -value = 0.560). Although the first hypothesis was that the more time spent on social media, the more vulnerable students would be to SMD, this finding and another study from the Netherlands disprove the hypothesis.¹⁹ The study in the Netherlands was longitudinal and involved 2019 secondary school adolescents. The findings were that, over time, the intensity of social media use and mental health problems were not associated in any direction.¹⁹

A study by Coyne, *et al.*, also showed that increased time spent on social media was not associated with increased mental health issues across development when examined at the individual level.²⁰

On the other hand, this study found a statistically significant relationship between the number of active social media accounts and SMD. The relationship had moderate strength and a positive pattern. This means that the higher the number of social media accounts, the higher the SMD score. The active accounts used by respondents were divided between real and fake accounts. Real accounts showed people’s true identities, while they used other identities in fake ones in social media interactions. Usually, they used this fake account to show their alter ego. The Merriam-Webster dictionary defines alter ego as a second self or a different version of oneself, such as the opposite side of a personality.²¹ A study by Barry, *et al.*, supports these results, stating that the more accounts owned, the more mental health problems occur in adolescents.²² Glazzard and Stones also showed that having multiple accounts on multiple social media platforms was associated with various mental health problems.²³

Although the duration of social media use statistically had no relationship with SMD, studies from Indonesia and China state that it depends on the self-regulation of social media users, particularly among college students.^{16,24} If college students have good self-regulation, they are able to control their social media behavior. This is because they are more aware that using social media too much leads to compulsiveness. A study by Balqis showed that emerging adults with high self-regulation are less likely to experience Instagram addiction.¹⁶ These findings lead to the conclusion that the focus of SMD prevention should not be to cut off the duration as the main action but to enhance a self-regulation.

This study’s strength was the addition of its findings to the limited existing studies related to SMD among adolescents. Since the greatest penetration of social media users is among adolescents in Indonesia,² there should be more studies on other public health problems caused by disorders or addiction behavior other than drug abuse. This study’s limitations were the potential for biased respondents’ answers due to the self-administered questionnaire, making it impossible to control the respondents’ perceptions of questions, and the difficulty of ensuring their answers were true. The sampling method was purposive, so the results were not generalizable.

Conclusion

This study reveals that college students are experiencing SMD, and most have a high duration of social media use and an excessive number of active accounts. More-

over, the number of active accounts has a statistically significant relationship with SMD, while the duration of social media use other than not. Further study is encouraged to differentiate between the duration of social media use and SMD when studying the impact of social media on mental health. On the other hand, one variable that could be considered in developing measures to prevent SMD among college students is reducing the number of social media accounts. The more social media accounts, the more students are triggered to compulsively use social media compulsively, making them vulnerable to SMD.

Abbreviations

SMD: Social Media Disorder; FPH UI: Faculty of Public Health Universitas Indonesia.

Ethics Approval and Consent to Participate

This study obtained ethical approval from the Research and Community Engagement Ethical Committee of the Faculty of Public Health, Universitas Indonesia, No. Ket-190/UN2.F10.D11/PPM.00.02/2022. Informed consent from all the participants was obtained before the data collection, and the authors ensured their anonymity.

Competing Interest

The authors declare that there are no significant competing financial, professional, or personal interests that might have affected the performance or presentation of the work described in this manuscript.

Availability of Data and Materials

Data and materials are available from the corresponding authors.

Authors' Contribution

TA led and conceptualized this study, developed the methodology, wrote the original manuscript, and reviewed and edited the final manuscript. UHZ conducted the formal analysis, wrote the original manuscript, and reviewed and edited the final manuscript. EM checked the formal analysis and also reviewed and edited the final manuscript.

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