A Descriptive Study of Adolescents' Problematic Social Media Use (PSMU) based on the Number of Actively Used Social Platforms

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Abstract

During the COVID-19 pandemic, social media platforms in Indonesia experienced a significant increase in total users, leading to a higher risk of addiction to social media and the internet compared to typical situations. Social media platforms also introduced new features that enabled novel ways of interacting during the pandemic. However, the use of various social media by adolescents remain underexplored. This study aims to provide a comprehensive overview of the problematic social media use in adolescents, comparing those based on the number of social platforms they actively use, such as Instagram, TikTok, and Twitter. We conducted an offline survey on a sample of 207 Indonesian junior and senior high school students (aged 10–19) from Jakarta, Bogor, Depok, Tangerang, and Bekasi. Data were collected using the Internet Addiction Test (IAT) and a demographic questionnaire. A one-way ANOVA revealed significant differences in PSMU among adolescents who actively use one, two, or three social media platforms. Adolescents who actively use three platforms tended to have higher PSMU levels. These findings highlight the need for targeted interventions that address adolescents' social media usage patterns to reduce the risks associated with excessive use.

Keywords: problematic social media use, social media platforms, adolescents, post-pandemic

Abstrak

Semasa pandemik COVID-19, platform media sosial di Indonesia mengalami peningkatan ketara dalam jumlah pengguna, yang membawa kepada risiko ketagihan media sosial dan internet yang jauh lebih tinggi berbanding situasi biasa. Terdapat perkembangan pada platform media sosial yang menyediakan cara interaksi baharu semasa pandemik. Namun begitu, penggunaan pelbagai media sosial oleh remaja selepas pandemik masih belum banyak diterokai. Kajian ini bertujuan memberikan gambaran menyeluruh mengenai penggunaan media sosial bermasalah dalam kalangan remaja, dengan membandingkan mereka berdasarkan bilangan platform media sosial yang digunakan secara aktif seperti Instagram, TikTok dan Twitter. Satu tinjauan luar talian telah dijalankan terhadap sampel 207 pelajar sekolah menengah rendah dan atas di Indonesia (berumur 10–19 tahun) dari Jakarta, Bogor, Depok, Tangerang dan Bekasi. Data dikumpul menggunakan Ujian Ketagihan Internet (IAT) dan soal selidik demografi. Menggunakan analisis ANOVA sehala, perbezaan signifikan dalam penggunaan media sosial bermasalah (PSMU) didapati dalam kalangan remaja yang aktif menggunakan satu, dua atau tiga platform media sosial. Hasil kajian menunjukkan bahawa remaja yang aktif menggunakan tiga platform media sosial cenderung mempunyai tahap PSMU yang lebih tinggi. Dapatan ini menekankan keperluan intervensi khusus yang memfokus kepada corak penggunaan media sosial remaja bagi mengurangkan risiko berkaitan penggunaan media sosial secara berlebihan.

Kata kunci: penggunaan media sosial bermasalah, platform media sosial, remaja, pasca-pandemik

◼1.0 INTRODUCTION

COVID-19 pandemic has transformed the dynamics of social interaction and communication across the globe. Physical distancing policy or large-scale social restriction in Indonesia, called PSBB (Pembatasan Sosial Berskala Besar), was implemented during the pandemic. The Ministry of Health issued this regulation to control the virus by restricting gatherings and limiting movement. This policy's implementation significantly affected people's behaviors and social interactions. With this restriction, most activities such as work and school were shifted to home environments. For adolescents (ie. junior and high school students), this meant that their academic activity transitioned into remote or online learning. As a result, they are required to spend much time on internet usage for academic purposes. However, the lack of in-person social interactions and limited outdoor activities also led to an increase in internet usage for entertainment and socialization, such as streaming videos, playing online games, and engaging on social media platforms (Siste et al., 2020).

People were looking for alternative means of communication and connection during PSBB (Pembatasan Sosial Berskala Besar), therefore digital communication using the internet experienced a significant increase. From previous studies, the percentage of people in Indonesia who use social media showed an increase from 59% of the population to 68.9% within two years during COVID-19, indicating a significant rise in total users during the pandemic (Handayani et al., 2023). In Indonesia, social media platforms saw a remarkable increase in users during the pandemic, such as YouTube (88%), WhatsApp (84%), and Instagram (79%) (Junawan & Laugu, 2020). Adolescents were also found to experience increasing duration in their social media usage. From research by Kingsley (2024), adolescents reported

spending more than three hours daily on social media platforms during the pandemic. In that study, social media addiction scores significantly increased compared to the levels before pandemic. Another study found that adolescents have approximately 3.2 hours for using social media daily from a total of 6.1 hours of internet use (Gumus et al., 2023). In Indonesia, Siste et al. (2021) found that internet usage among adolescents increased by 59.7% during the pandemic, reaching an average of 4.34 hours per day. It showed adolescents making social media as a one of primary channels for interaction during digital communication behavior during the pandemic.

Prolonged exposure to social media has been previously shown to heighten the risk of adolescents developing internet or social media addiction, with several factors contributing to this risk, such as psychological distress, impulsivity, and specific gratifications sought through social media use (Leung, 2014). COVID-19 pandemic has exacerbated this impact on adolescents due to increased stress, anxiety, and social isolation, leading to higher levels of problematic internet usage (Volpe et al., 2022). Addiction in social media is depicted through compulsive behaviors related to the use of the internet and social media. This results in impairment or distress in several areas, such as social life, work, and other key aspects of life (Shaw & Black, 2008). A related concept is Problematic Social Media Use (PSMU). It specifically refers to excessive engagement with social media platforms in a way that negatively impacts one's mental health and daily functioning. PSMU shares similar characteristics with internet addiction, such as compulsive checking of social media, preoccupation with online interactions, and an inability to reduce usage despite experiencing negative consequences (Kuss & Griffiths, 2017).

In adolescents, issues in the usage of social media have become particularly concerning. This developmental stage is marked by identity formation and social exploration, making adolescents more vulnerable to the addictive aspects of social media (Vannucci et al., 2017). When using social media, adolescents can receive instant social feedback and validation, which can lead to compulsive checking behaviors and a reliance on virtual interactions. While they are drawn to the social connections these platforms provide, excessive use can have negative consequences, including low academic performance, anxiety, and depressive symptoms (Bányai et al., 2017). Moreover, PSMU can disrupt critical face-to-face interactions and the development of real-life social skills, further compounding mental health issues (Király et al., 2020).

Furthermore, the greater the number of social media platforms an individual owns and actively uses, the higher the risk for them to develop problematic social media use (PSMU). Adolescents, in particular, who nowadays manage multiple social media accounts—such as Instagram, TikTok, and Twitter—often face increased exposure to potentially addictive features, like endless scrolling, instant feedback, and social validation through likes and comments (Vannucci et al., 2017). The constant switching between platforms can create a cycle of compulsive checking, making it harder to disconnect and contributing to symptoms of PSMU, such as anxiety and social isolation (Montag et al., 2019). Additionally, the more platforms adolescents engage with, the more likely they are to encounter opportunities for social comparison, which can fuel feelings of inadequacy and loneliness, further reinforcing their attachment to social media (Kross et al., 2013). Research by Primack et al. (2017) found potential risks associated with using multiple social media. Compared to participants who only used 0 until 2 social media platforms, those who engaged with 7 until 11 social media experienced significantly higher levels of depression and anxiety symptoms. This multi-platform usage amplifies the risks associated with PSMU, underscoring the importance of understanding not just time spent on social media, but also the impact of managing multiple accounts on mental health and well-being.

Although COVID-19 pandemic has been shown to impact social media addiction significantly, there is still a considerable gap in research focusing on this issue in the post-pandemic context. Existing research has focused primarily on the immediate effects of the pandemic. However, less attention has been given to how these behaviors have persisted, evolved, or potentially worsened as social restrictions lifted. Understanding the post-pandemic landscape is crucial, as the habitual social media use formed during the pandemic may have created lasting behavioral changes, potentially increasing the risk of social media addiction over time (Griffiths et al., 2021). Studies exploring this ongoing impact could provide valuable insights. Therefore, this present study aims to provide a comprehensive overview of the problematic social media use in adolescents, comparing those based on the number of social platforms they actively use.

■2.0 LITERATURE REVIEW

2.1 Adolescent

Adolescence is a critical developmental phase marked by significant changes in physic, emotion, and social. Adolescence is a phase when they start developing their identities and forming social connections. During this period, people increasingly rely on peer relationships, making social media a key platform for interaction and self-expression. As adolescents navigate the complexities of identity formation, social media provides them with opportunities to explore different facets of themselves, connect with peers, and gain social validation, which can significantly influence their self-esteem and mental health (Valkenburg & Peter, 2011). However, while social media can facilitate positive interactions and support, it also poses risks, such as exposure to cyberbullying and the pressure to conform to unrealistic standards, necessitating a balanced approach to its use during this formative stage (Kuss & Griffiths, 2017)

2.2 Problematic Social Media Use

This study uses the PSMU theoretical framework by Griffiths (2005), which explains six components of addiction. There are six factors that define PSMU, the first one is salience. Salience is defined as preoccupation with social media, or planning to use it. Second factor is relapse, which refers to inability to reduce social media usage. The next one is mood modification, which is defined as using social media to escape from emotional issues. The fourth factor is withdrawal, which refers to feeling distressed when someone cannot access social media. The next factor is tolerance, which is defined as the need to spend much time on social media. Lastly, conflict refers to a negative impact on different areas of life from using social media excessively. A lack of self-regulation marks PSMU, often leading to compulsive behaviors and psychological dependence, where individuals feel compelled to use social media despite its negative consequences.

In this study, PSMU measurement is using the IAT (Young, 1998) which has six dimensions. First dimension is salience, which refers to the feeling consumed by internet use, concealing this behavior from other people, losing interest in interacting with someone in real life or losing interest in other activities, and choosing to spend time online alone. The second dimension is excessive use, which refers to engaging in compulsive online behavior, losing control over time spent online, and concealing it from others. The next one is neglect of

work, which is defined as compromised performance and productivity due to excessive time spent online, along with defensiveness or secrecy about online time. The fourth dimension is anticipation, which refers to when someone is not online, they are constantly thinking about being online and feeling a strong urge to use the internet. Fifth is lack of control, which refers to struggling to manage online time, such as spending more time online than initially intended and other people complaining about their time spent online. Last dimension, neglect of social life, refers to relying on online relationships to reduce stress and manage their problems.

■3.0 METHODOLOGY

3.1 Participants

The participants in this study are adolescents ranging from 10-19 years old (according to adolescent age criteria by WHO) who are still enrolled as school students. A non-probability purposive sampling technique was used in this study, in which participants were selected according to the inclusion criteria of this study. Five schools in the Greater Jakarta area (Jabodetabek) were chosen, consisting of three middle schools and two high schools. Schools that agreed to participate received detailed information about the study's procedures and requirements. They assisted in distributing parental informed consent forms, which were sent home for review and approval by parents or legal guardians. Along with the consent form, parents completed a demographic data questionnaire. Only students with parental consent were included in the study, while those without consent or who opted out faced no penalties or negative consequences.

3.2 Measurements

3.2.1 Demographic Survey

3.2.1.1 Demographic Survey

To assess participants' eligibility, demographic data were collected at the beginning of data collection, prior to the main questionnaire. Demographic information such as age, gender and educational level were gathered. In the other section, additional questions were asked: social media platforms they actively used every day, the choices are Instagram, Twitter, TikTok, and Facebook.

3.2.1.2 Internet Addiction Test (Young, 1998)

To assess participant's psychological dependence, compulsive use, and withdrawal symptoms related to social media addiction, IAT is used in this study. Referring to Ismail et al. (2020), IAT can also be used to assess participants' tendencies toward problematic social media use or PSMU. This self-inventory tool uses a Likert scale for its assessment and has been adapted into Indonesian by Siste et al. (2021), consisting of 18 items. Psychometric analysis of this tool showed validity results through Confirmatory Factor Analysis. Cronbach's Alpha for reliability test yielded a result of 0.855, indicating that the Internet Addiction Test is valid and reliable (Siste et al., 2021; Young, 1998). To determine the level of internet addiction, this study used the cut-off scores for the 18-item Indonesian version of IAT which has been recalibrated by Siste et al. (2021), see Table 1.

Table 1 IAT Indonesian version cut-off scores

Internet addiction level	Cut-off scores
Normal	0–27
Mild	28–44
Moderate	50–79
Severe	72–80

3.3 PROCEDURES

Data collection conducted from May to July 2024. This study has obtained ethical clearance by Research Ethics Committee of the Faculty of Psychology, Universitas Indonesia, under reference number 250/FPsi.Komite Etik/PDP.04.00/2023. Before collecting data, parents of participants were asked to fill out the informed consent independently using hardcopy consent forms. After obtaining parental consent, participants were given questionnaires to complete in a classroom setting, under the supervision of the researchers. This study utilized a comparative design, which is conducted when researchers are interested in identifying differences between one group and another regarding one or more variables.

3.4 Statistical Analysis

Statistical analysis was performed using descriptive statistics, such as median and percentage. One-way ANOVA was applied to describe comparison of PSMU among the five groups regarding the number of actively used social platforms (0, 1, 2, 3, and 4 platforms). To reduce Type I errors, Bonferroni correction was applied.

■4.0 DEMOGRAPHIC DESCRIPTION

Demographic characteristics of participants are provided in Table 2. 207 participants from junior (n = 140) and senior high schools (n = 67) in Jakarta, Bogor, Depok, Tangerang, and Bekasi area completed the research questionnaires (median age 14 years). They primarily used Instagram (n = 162), followed by TikTok (n = 130), Twitter (n = 33), and Facebook (n = 15) as the social media platforms with which they actively engage. Using the Internet Addiction Test (IAT), a total of 32.4% of participants experienced internet addiction at different levels, 46.9% in mild addiction level, 20.8% in moderate addiction level, and none in severe addiction level.

Table 2 Demographic characteristics of participants (*n* = 207)

	Value
Participant age, median	14
Participant gender, n (%)	
Male	101 (48.8)
Female	106 (51.2)
Participant education level, n (%)	
Junior school	140 (67.6)
High school	67 (32.4)
Social media platforms	
Instagram	162
Twitter / X	33
TikTok	130
Facebook	15
Level of internet addiction, n (%)	
Normal	67 (32.4)
Mild addiction	97 (46.9)
Moderate addiction	43 (20.8)
Severe addiction	0 (0)

4.1 Comparison Of Psmu Score Among The Number Of Actively Used Social Media Platform

Table 3. shows one-way ANOVA results. In this table, PSMU scores were compared with the number of actively used social platforms, ie. 0, 1, 2, 3, or 4. PSMU scores were significantly different among those groups regarding the number of actively used social platforms (F = 3.605, p < 0.05). After applying a Bonferroni correction, only the differences between one and three platforms were statistically significant (p = 0.003). There is a trend of increasing mean scores for PSMU, where the more social media platforms a person actively uses, the higher their PSMU score tends to be. However, this trend decreases in the final group, which has four platforms, showing a slight decrease in PSMU scores for individuals with the highest number of social media accounts.

Table 3 Comparison of PSMU scores among number of actively used social media platforms

	Mean (SD)	F	Sig.
Number of actively used social platform		3.605	.007*
0 platform (n = 9)	31.67 (13.638)		
1 platform (n = 93)	30.90 (10.702)		
2 platforms (n = 72)	34.65 (13.904)		
3 platforms (n = 29)	40.48 (12.651)		
4 platforms (n = 4)	36.75 (14.245)		

■5.0 DISCUSSION AND RECOMMENDATION

This study shows a significant difference between two variables, which is the number of social media platforms participants actively use and PSMU scores. Specifically, PSMU scores tended to increase with the number of social media platforms used, with the highest scores observed among adolescents using three platforms. This aligns with prior research indicating that using multiple platforms can intensify exposure to addictive features and social comparison, contributing to PSMU (Primack et al., 2017; Montag et al., 2019). However, an interesting pattern emerged in which PSMU scores slightly declined in adolescents who reported using four platforms. This dip may suggest that adolescents who manage four or more platforms develop different usage patterns, potentially distributing their attention more evenly across platforms rather than focusing intensively on a few, as seen with those using three platforms. Alternatively, this slight decrease in PSMU could also be attributed to sample limitations or varying user motives (Gumus et al., 2023). Future research should focus on exploring whether the distribution of attention across more platforms may help alleviate compulsive behaviors or if other factors, such as personality traits or social support systems, play a role in moderating the impact of multi-platform use on PSMU.

  This study's findings emphasize the need for designing interventions aimed at reducing PSMU among adolescents. Given that adolescents using multiple platforms appear more susceptible to problematic usage, intervention programs should focus on helping users develop self-regulation strategies, such as setting time limits or defining specific times for social media use (Montag et al., 2019).

Additionally, educational efforts could emphasize healthy usage patterns and the importance of balancing online and offline activities. Schools, parents, and counselors could play a key role in guiding adolescents towards mindful social media use and helping them build resilience against the negative effects of social comparison and peer pressure that are prevalent on many platforms (Vannucci et al., 2017).

The findings also highlight the necessity of contextualizing social media behaviors in the post-pandemic era, as the pandemic has left a lasting impact on digital habits. During the COVID-19 pandemic, adolescents developed a greater reliance on social media to compensate for reduced face-to-face interactions, which may have contributed to heightened PSMU risks (Siste et al., 2020). With restrictions lifted, it is unclear how these behavioral patterns will evolve; thus, longitudinal studies are needed to assess whether pandemic-related increases in PSMU are temporary or if they have established new digital habits that persist long-term. Such research could provide insights into whether adolescents who adopted higher social media usage during the pandemic are at sustained risk for PSMU, even as their social environments return to normal (Griffiths et al., 2021).

Lastly, although the sample size of the current study is sufficient for preliminary insights, it may restrict the generalizability of the findings. Future studies should focus on including larger and more diverse samples to validate these trends and further explore potential moderating variables, such as personality traits, gender, and socioeconomic status, which could influence adolescents' susceptibility to PSMU. A larger sample could also facilitate subgroup analyses to identify specific risk profiles and refine interventions for different user groups. Enhanced understanding of how individual differences and demographic factors interact with multi-platform usage would strengthen the development of targeted preventive measures and promote healthier digital engagement among adolescents.

■6.0 CONCLUSION

This study provides a comparative analysis of PSMU based on the number of social media platforms used by Indonesian adolescents in the post-pandemic context. Findings indicate that adolescents using three platforms exhibit the highest levels of PSMU, highlighting the association between multi-platform usage and the risk of problematic behaviors. However, the decline in PSMU scores among users of four platforms suggests a nuanced relationship that warrants further investigation. The insights from this study underscore the importance of designing intervention programs tailored to the specific patterns of social media usage among adolescents, as well as the need for further studies to explore how the intensity and variety of platform use may influence mental health and social outcomes over time.

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Conflicts of Interest

The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper

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