



Social Media Use and Academic Burnout among Pharmacy Students: Does Self-Regulated Learning Moderate the Relationship?

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Abstract

Background and Aim: Academic burnout has become a major concern among pharmacy students due to intensive academic demands, including laboratory activities, complex coursework, and continuous assessments. Social media use has been identified as a potential factor contributing to academic burnout, while self-regulated learning may serve as a protective personal resource. However, empirical findings regarding the role of self-regulated learning in this relationship remain limited and inconsistent. This study aimed to examine the effect of social media use on academic burnout and to investigate whether self-regulated learning moderates this relationship among pharmacy students.

Materials and Methods: This study employed a quantitative correlational design with a moderating variable approach. Participants consisted of 319 pharmacy students from private universities in Banyumas, Central Java, Indonesia, selected using proportionate stratified random sampling. Data were collected using the Maslach Burnout Inventory–Student Survey (MBI-SS), the Social Media Use Scale (SMUS), and the Self-Regulated Learning Scale (SSRL). Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.

Results: The findings indicated that social media use had a positive and significant effect on academic burnout ($\beta = 0.130$, $t = 2.845$, $p = 0.004$), suggesting that higher levels of social media engagement were associated with greater academic burnout. Self-regulated learning demonstrated a significant negative effect on academic burnout ($\beta = -0.480$, $t = 10.184$, $p < 0.001$), indicating that students with stronger self-regulated learning skills experienced lower levels of burnout. However, the interaction effect between social media use and self-regulated learning was not significant ($\beta = -0.015$, $t = 0.319$, $p = 0.749$), indicating that self-regulated learning did not moderate the relationship between social media use and academic burnout.

Conclusion: Social media use contributes significantly to academic burnout among pharmacy students, whereas self-regulated learning functions as an independent protective factor that reduces burnout. However, self-regulated learning does not buffer the adverse effects of social media use on academic burnout. These findings highlight the importance of promoting healthy social media habits and strengthening students' self-regulated learning competencies to support academic well-being.

Keywords: Academic Burnout; Social Media Use; Self-regulated Learning; Pharmacy Students

Introduction

Pharmacy is a high-achieving academic field that combines the fields of health sciences, chemistry, and medicine (Nezhad et al., 2024). Pharmacy students are required to grasp different scientific concepts, to participate in intensive laboratory work, to prepare reports, and to undergo comprehensive and continuous academic evaluation (Cokro et al., 2021). Laboratory work, reporting, and the high level of complexity of pharmacology curricula may also be a source of academic stress for students (Aditia et al., 2023). This high academic pressure may lead to long-term stress, which in turn may increase the student's risk of burnout.





Academic burnout is a state of exhaustion caused by academic demands, characterised by emotional exhaustion, cynicism about academic work, and reduced self-efficacy as a student (Schaufeli et al., 2002). Academic burnout in students may affect various aspects, including academic performance, learning and motivation, and increased depression (Fahira et al., 2025; Kaur et al., 2020; Maisyaroh & Kholisna, 2024; Zhuang et al., 2023). Academic burnout is therefore an important issue that needs to be addressed by students in the pharmacy program.

Social media use is one of the factors believed to contribute to academic burnout. Social media use is defined as the degree of social media engagement, which depends on the frequency of activity and the type of engagement, whether active or passive, on the part of the individual. For students, social media is not only a means of communication and entertainment but also a way to escape academic pressure. However, excessive use of social media may result in distraction, reduced focus on learning, impaired sleep quality, and academic fatigue (Tuck & Thompson, 2024).

Several previous studies have shown that social media use has an impact on academic performance. (Evers et al., 2020) explain that excessive use of social media may impair the quality of sleep and thus increase academic fatigue. Another study by Ma et al. (2025) shows that social media use can cause concentration problems, anxiety due to fear of missing out, and a lack of self-control, which ultimately leads to academic fatigue. In addition, excessive use of social media may also lead to mental fatigue and reduce the student's commitment to academic activities.

However, research findings on the relationship between social media use and academic burnout remain inconsistent. Tomaszek & Cymerman (2022) found that general Facebook use was not directly associated with burnout, whereas addictive forms of social media engagement significantly predicted higher burnout levels over time. Similarly, other studies have reported both positive and non-significant associations between social media use and academic well-being. These mixed findings suggest that the effect of social media use on academic burnout may not be uniform across student populations and may depend on the presence of individual protective or risk factors.

The relevance of this issue becomes even more apparent in the context of Indonesian higher education, where social media penetration among young people is among the highest in Southeast Asia. Indonesian university students frequently use social media not only for social interaction and entertainment, but also for academic communication and information exchange. While these platforms can support learning activities, excessive engagement can blur the boundaries between academic and non-academic activities, potentially increasing cognitive load and psychological burnout. This situation is also a problem for pharmacy students.

One factor that may explain the inconsistent relationship between social media use and academic burnout is self-regulated learning (SRL). Self-regulated learning is a student's ability to actively manage their cognition, motivation, and behavior to achieve academic goals (Zimmerman, 2002). Students with strong SRL skills are generally better able to plan their learning activities, monitor their academic progress, control distractions, and manage their study time effectively. These skills can help students maintain academic engagement despite frequent social media exposure. (Yanti et al., 2025) stated that students who can use self-directed learning effectively can manage their time, attention, and motivation, as well as control their use of social media and minimize the distractions they create.

This study conceptualizes self-regulated learning/SRL as a moderating variable, not a mediating variable. A mediator explains the mechanism by which one variable influence another, while a moderator determines the strength or direction of the relationship. Theoretically, social media use does not necessarily lead to changes in students' self-regulated learning abilities. Instead, SRL is considered a relatively stable personal resource that influences how students respond to environmental demands, including social media exposure. Based on Social Cognitive Theory (Bandura, 1989), individuals with stronger self-regulation capacities are expected to be better able to manage distractions and maintain learning goals when exposed to social media. Therefore, SRL is more appropriately positioned as a moderator that can weaken or strengthen the influence of social media use on academic burnout.

Several studies suggest that self-regulated learning can help to mitigate the negative impacts of social media use. Self-regulated learning has been shown to directly reduce academic procrastination (Yaningsih & Fachrurrozie, 2018) and academic stress (Novariska et al., 2024). However, research on





the role of self-regulated learning as a moderating factor in the relationship between social media use and academic burnout remains limited, especially among students in pharmacy programmes.

In addition to the evidence gap, a population gap also exists. Previous studies on academic burnout have primarily focused on secondary school students and university students in general (Barbosa et al., 2016; Dyantari & Simarmata, 2024; Evers et al., 2020; Rabuka et al., 2023), while studies involving Pharmacy students remain relatively limited. In fact, Pharmacy students face substantial academic demands, including intensive laboratory work, complex learning materials, and numerous academic assignments, which may increase their vulnerability to academic burnout. This condition indicates the presence of a population gap, highlighting Pharmacy students as an important group for further investigation.

Furthermore, the present study focuses on Pharmacy students enrolled in private universities in Banyumas, Central Java, Indonesia. These institutions operate within a unique educational context characterized by relatively limited academic resources compared to large public universities, high expectations for academic achievement, intensive practical training requirements, and the need for students to adapt to increasingly digital learning environments. In addition, many students balance academic responsibilities with organizational involvement, commuting demands, and family expectations, which may further increase psychological strain. These institutional and socio-cultural conditions may contribute to higher vulnerability to academic burnout and therefore warrant specific investigation.

Preliminary interviews conducted with Pharmacy students from several private universities in Banyumas further revealed experiences of physical exhaustion, emotional fatigue, decreased learning motivation, and reduced academic confidence resulting from intensive coursework, laboratory activities, and frequent academic evaluations. These findings indicate the presence of academic burnout symptoms and highlight the importance of examining factors that may contribute to or protect against burnout in this population.

Unlike previous studies that predominantly examined self-regulated learning as a direct predictor or mediator of academic outcomes, this study contributes to the literature by investigating self-regulated learning as a moderating variable in the relationship between social media use and academic burnout among Pharmacy students. Therefore, this study aims to examine the effect of social media use on academic burnout and to determine whether self-regulated learning moderates this relationship among Pharmacy students at private universities in Banyumas, Central Java, Indonesia.

Objectives

To analyze the effect of social media use on academic burnout among Pharmacy students.

To analyze the effect of self-regulated learning on academic burnout among Pharmacy students.

To analyze the role of self-regulated learning as a moderating variable in the relationship between social media use and academic burnout among Pharmacy students.

Literature review

Academic Burnout

Academic burnout refers to a state of psychological exhaustion experienced by students due to prolonged academic demands, characterized by emotional exhaustion, cynical attitudes toward academic activities, and reduced feelings of competence as students (Schaufeli et al., 2002). Student burnout is a complex issue influenced by various factors. A supportive school environment that fosters the development of psychosocial needs, positive social and family support, the use of adaptive coping strategies, and the maintenance of a healthy lifestyle can help reduce the risk of burnout (Chong et al., 2025).

Social Media Use

Social media usage describes the extent to which individuals engage in social networking platforms through various forms of interaction, content creation, information exchange, and content consumption (Tuck & Thompson, 2024). In higher education, social media serves a variety of functions, including communication, collaboration, information seeking, academic discussions, and





entertainment. While social media can facilitate learning and social connectivity, excessive or inappropriate use can lead to cognitive impairment, emotional exhaustion, and decreased academic engagement.

Social media use in the present study is conceptualized as a multidimensional construct comprising four dimensions: image-based use, comparison-based use, belief-based use, and consumption-based use (Tuck & Thompson, 2024). Image-based use refers to activities aimed at managing self-presentation and shaping how one is perceived by others in online environments. Through selective self-disclosure, content editing, and impression management, individuals attempt to construct desirable online identities (Liu & Lei, 2025). Comparison-based use, in contrast, involves evaluating oneself against other users or against one's past self (Tuck & Thompson, 2024). Social comparison serves as a mechanism through which individuals assess their abilities, achievements, and social standing (Liang, 2024). Such comparisons may occur upward, when individuals compare themselves with those perceived as more successful, often leading to diminished self-esteem and negative emotions, or downward, when comparisons are made with less fortunate others, potentially generating temporary psychological relief (Shen, 2025).

In addition, social media engagement is shaped by users' beliefs and patterns of content consumption. Belief-based use encompasses individuals' perceptions regarding the benefits and risks of social media, as well as the expression of personal opinions, emotions, and viewpoints on various issues, including those that may be sensitive or controversial (Tuck & Thompson, 2024). These beliefs influence online behavior, psychological experiences, and overall well-being, while experiences accumulated through social media interactions may simultaneously reinforce or reshape those beliefs (Finserås et al., 2026). Meanwhile, consumption-based use refers to passive engagement characterized by browsing, viewing, and consuming content without active interaction (Tuck & Thompson, 2024). Meanwhile, consumption-based use refers to passive engagement characterized by browsing, viewing, and consuming content without active interaction (Baqir et al., 2025). Taken together, these four dimensions illustrate that social media use extends beyond mere frequency of engagement and encompasses complex psychological processes that may influence students' academic and emotional functioning.

Accordingly, the impact of social media use on academic outcomes should be understood as a function of how students engage with these four dimensions. Image-based and comparison-based engagement may generate psychological pressure through social evaluation processes, whereas belief-based and consumption-based engagement may increase emotional and cognitive demands that interfere with academic functioning. Consequently, higher levels of social media use are expected to increase students' vulnerability to academic burnout.

Self-regulated Learning

Self-regulated learning refers to an individual's ability to actively direct and manage the learning process through metacognitive, motivational, and behavioral regulation (Zimmerman, 1989). The development of Zimmerman's SRL model was influenced by Albert Bandura's social cognitive theory, which emphasizes the importance of observation, social interaction, and self-control in the learning process (Bandura, 1989).

Among Zimmerman's SRL frameworks, the Cyclical Phases Model is the most widely applied in educational research due to its systematic explanation of the self-regulation process. The model consists of three phases: the *forethought phase*, *performance phase*, and *self-reflection phase* (Zimmerman, 2000). During the *forethought phase*, students establish learning goals and formulate strategies to achieve them. In the *performance phase*, students implement learning strategies while monitoring their concentration, motivation, and academic progress. Subsequently, in the *self-reflection phase*, students evaluate their learning outcomes and the effectiveness of the strategies employed. This model conceptualizes self-regulated learning as a continuous cyclical process that enables students to improve their learning behaviors based on prior experiences (Panadero, 2017).

Zimmerman & Moylan (2009) further refine the model by incorporating metacognitive aspects and volitional strategies into the performance phase. This development suggests that self-regulated



learning involves not only cognitive abilities, but also the capacity to maintain focus, manage distractions, and sustain learning motivation.

In the context of social media use, each phase of the SRL cycle may function as a protective mechanism against digital distractions. During the forethought phase, students establish academic goals and formulate strategies for managing online activities. During the performance phase, students monitor their attention and regulate their engagement with social media, thereby reducing susceptibility to image-based validation seeking and excessive consumption-based browsing. Finally, during the self-reflection phase, students evaluate whether their social media behaviors support or hinder their academic goals and subsequently adjust their strategies. Through these cyclical processes, students with stronger self-regulated learning skills are theoretically better equipped to manage social media-related distractions and reduce their risk of academic burnout.

Conceptual Framework

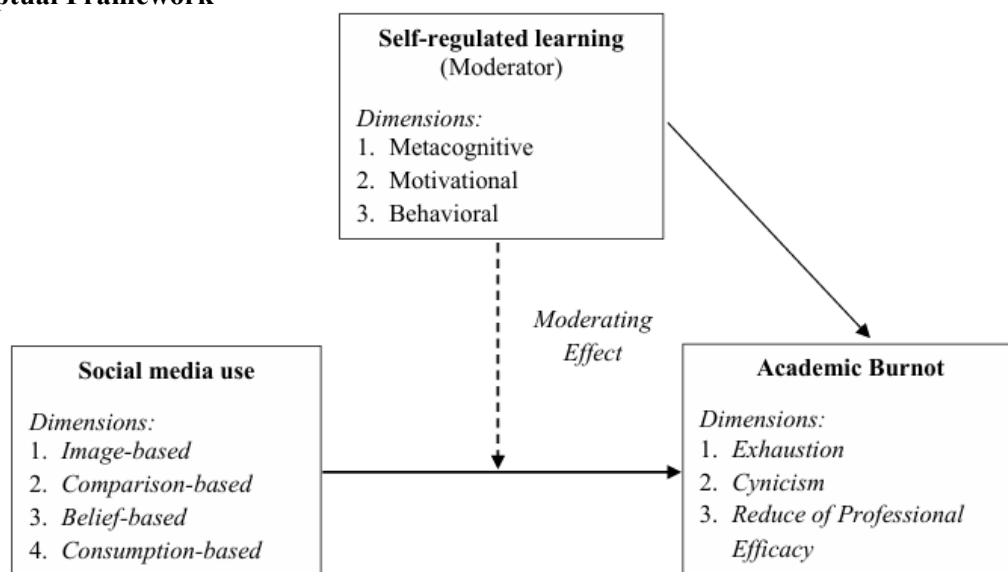


Figure 1 Conceptual framework of the research.

The conceptual framework proposes that social media use functions as a risk factor for academic burnout, whereas self-regulated learning serves as a personal regulatory resource that may directly reduce burnout and potentially alter the strength of the relationship between social media use and academic burnout. Based on the theoretical arguments and empirical findings discussed above, the following hypotheses were formulated:

H1: Social media use positively predicts academic burnout among Pharmacy students.

H2: Self-regulated learning negatively predicts academic burnout among Pharmacy students.

H3: Self-regulated learning moderates the relationship between social media use and academic burnout

Methodology

Research Design

This study employed a quantitative approach with a correlational research design and incorporated a moderating variable to examine the effect of social media use on academic burnout, with self-regulated learning serving as the moderator among Pharmacy students at private universities in Banyumas, Central Java, Indonesia. A quantitative correlational design was considered appropriate because it enables the identification and analysis of relationships among variables as well as the examination of moderating effects within the proposed research model (Creswell, 2003). Furthermore, the use of a moderator variable allows for a deeper understanding of the conditions under which social media use may influence academic burnout among university students.



Population and Sample

The population of this study consisted of 1,220 Pharmacy students enrolled at private universities in Banyumas. The sample in this study was 301 participants based on the Slovin formula. A total of 319 participants were selected using proportionate stratified random sampling. The majority of respondents were from Universitas Muhammadiyah Purwokerto ($n = 181$, 57%), followed by Universitas Harapan Bangsa ($n = 75$, 23%), STIKes Ibnu Sina Ajibarang ($n = 36$, 11%), and STIKes Bina Cipta Husada ($n = 27$, 9%). Based on academic semester, most respondents were in the second semester ($n = 119$, 38%), followed by the sixth semester ($n = 70$, 22%), fourth semester ($n = 68$, 21%), and eighth semester ($n = 62$, 19%). In terms of gender distribution, the sample was predominantly female, comprising 273 students (86%), while male respondents accounted for 46 students (14%).

Research Instruments

Academic burnout was measured using a modified version of the Maslach Burnout Inventory–Student Survey (MBI-SS) developed by Schaufeli et al. (2002). The scale consisted of 15 items. Examples of items representing the exhaustion dimension included: “*Saya merasa lelah akibat beban studi yang saya hadapi*” and “*Saya merasa kelelahan emosional akibat tuntutan perkuliahan*”. The cynicism dimension included items such as: “*Saya mengalami penurunan minat dalam pelajaran semenjak masuk perkuliahan*” and “*Saya menjadi kurang antusias terhadap studi yang saya jalani*”. Meanwhile, the reduced professional efficacy dimension included items such as: “*Saya mampu mengatasi masalah yang muncul selama proses studi saya dengan efektif*” and “*Saya yakin bisa menyelesaikan suatu tugas yang diberikan dengan baik*”. The reliability coefficient of the scale demonstrated excellent internal consistency, with a Cronbach’s alpha value of 0.949.

Social media use was measured using a modified version of the Social Media Use Scale (SMUS) developed by Tuck & Thompson (2024). The scale consisted of 19 items encompassing four dimensions: image-based, comparison-based, belief-based, and consumption-based social media use. Examples of items representing the image-based dimension included “*Saya sering membagikan postingan yang positif tentang diri saya di media sosial*” and “*Saya sering memperhatikan jumlah like, komentar, pengikut di akun media sosial saya*”. The comparison-based dimension included items such as “*Saya membandingkan penampilan saya dengan orang lain yang ada di media sosial*” and “*Saya membandingkan kehidupan saya dengan orang lain di media sosial*”. The belief-based dimension included statements such as “*Saya membagikan cerita pribadi yang bersifat negatif melalui media sosial*” and “*Saya membagikan postingan negatif tentang orang lain*”. Meanwhile, the consumption-based dimension included items such as “*Saya sering kali scroll feed media sosial tanpa ada tujuan yang jelas*” and “*Saya sering melihat konten orang lain di media sosial*”. The scale demonstrated excellent internal consistency reliability, with a Cronbach’s alpha coefficient of 0.974.

Self-regulated learning was measured using a modified version of the Self-Regulated Learning Scale (SSRL) developed by Rusdi (2025) based on the dimensions proposed by Zimmerman (1989). The scale consisted of 38 items. Examples of items in the metacognitive dimension included “*Saya membuat ringkasan materi selama proses perkuliahan*” and “*Saya sering malamun di kelas sehingga kehilangan poin penting*”. In the motivational dimension, example items included “*Saya belajar dengan gigih selama proses perkuliahan*” and “*Saya merasa usaha saya dalam mengerjakan tugas sia-sia*”. Meanwhile, examples of items in the behavioral dimension included “*Saya mencari tempat yang bisa membuat saya fokus dalam mengerjakan tugas*” and “*Saya kurang meluangkan waktu untuk belajar*”. The scale demonstrated excellent reliability, with a Cronbach’s alpha coefficient of 0.969.

Data Collection Procedure

Data collection was conducted from February 3, 2026, to March 4, 2026, based on a research permit issued by the Dean of the Faculty of Psychology, Universitas Muhammadiyah Purwokerto, under reference number C.9-VIII/172-S.Ph/F.Psi/I/2026. The research instrument was administered online via Google Forms. At the beginning of the questionnaire, participants were provided with information regarding the purpose of the study, a guarantee of data confidentiality, and a statement emphasizing that participation in this study was voluntary.

Data Analysis



Model evaluation in this study was conducted using the Partial Least Squares Structural Equation Modeling (SEM-PLS) approach to examine the structural relationships among latent variables and assess the moderating effect within the proposed model. SEM-PLS analysis consists of two sub-models, namely the measurement model (*outer model*) and the structural model (*inner model*) (Ghozali & Kusumadewi, 2023). The *outer model* evaluation included assessments of construct validity, comprising convergent validity and discriminant validity, as well as construct reliability. Convergent validity was evaluated based on the *outer loading* values of each indicator. Indicators with *outer loading* values ≥ 0.70 were considered to meet the validity criteria, whereas indicators with *outer loading* values < 0.70 were considered for elimination from the model (Hair et al., 2014). In addition, the measurement model was assessed using indicator loadings, Cronbach's alpha (α), composite reliability (CR), and average variance extracted (AVE). The *inner model* was evaluated based on several criteria, including collinearity values, coefficient of determination (R^2), predictive relevance (Q^2), effect size (f^2), path significance testing, and moderating effect analysis. Model evaluation in this study was conducted using the Partial Least Squares Structural Equation Modeling (SEM-PLS) approach using SmartPLS software version 4.

Results

1. Evaluation of Measurement Models

The results of the outer model analysis are shown in Figure 2.

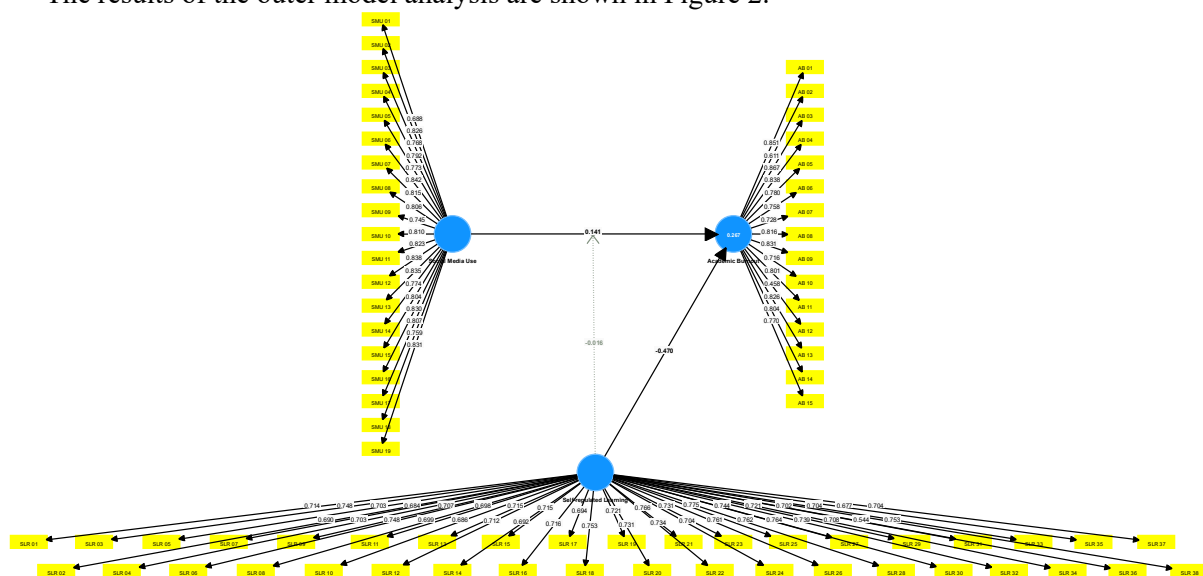


Figure 1. Measurement Model (Outer Model)

Convergent validity was assessed by examining the factor loading and Average Variance Extracted (AVE) values. Convergent validity is considered satisfactory when the factor loading values exceed 0.70, and the Average Variance Extracted (AVE) values are greater than 0.50 (Hair et al., 2019). The results of the analysis are presented in Table 1.

Table 1 Outer Loading

Dimension	Indicator	Outer Loading Value
<i>Academic burnout</i> <i>Exhaustion</i>	AB1	0,851
	AB3	0,867
	AB4	0,838
	AB5	0,780
<i>Cynicism</i>	AB6	0,758



Dimension	Indicator	Outer Loading Value
<i>Reduce of professional efficacy.</i>	AB7	0,728
	AB8	0,816
	AB9	0,831
	AB10	0,716
	AB11	0,801
	AB13	0,826
<i>Social media use</i>	AB14	0,804
	AB15	0,770
<i>Image-based</i>	SMU2	0,826
	SMU3	0,768
	SMU4	0,792
	SMU5	0,773
<i>Comparison-based</i>	SMU6	0,842
	SMU7	0,815
	SMU8	0,806
	SMU9	0,745
	SMU10	0,810
<i>Belief-based</i>	SMU11	0,823
	SMU12	0,838
	SMU13	0,835
	SMU14	0,774
<i>Consumption-based</i>	SMU15	0,804
	SMU16	0,830
	SMU17	0,807
	SMU18	0,759
	SMU19	0,831
<i>Self-regulated Learning</i>		
<i>Metacognitive</i>	SLR1	0,714
	SLR3	0,748
	SLR4	0,703
	SLR5	0,703
	SLR6	0,748
	SLR9	0,707
	SLR12	0,712
	SLR13	0,715
	SLR15	0,715
	SLR16	0,716
	SLR18	0,753
<i>Motivational</i>	SLR19	0,721
	SLR20	0,731
	SLR21	0,766
	SLR22	0,734
	SLR23	0,731
	SLR24	0,704
	SLR25	0,775
	SLR26	0,761
	SLR27	0,744
	SLR28	0,762
	SLR29	0,721
	SLR30	0,764





Dimension	Indicator	Outer Loading Value
Behavior	SLR31	0,702
	SLR32	0,739
	SLR33	0,704
	SLR34	0,708
	SLR37	0,704
	SLR38	0,753

Based on the convergent validity testing presented in the table above, the indicators of the academic burnout, social media use, and self-regulated learning variables demonstrated outer loading values above 0.70, indicating that the constructs met the criteria for convergent validity. However, several indicators did not meet the minimum outer loading threshold and were therefore excluded from the model.

For the academic burnout variable, the excluded items were AB2 and AB12. In the social media use variable, SMU1 was removed. Meanwhile, for the self-regulated learning variable, the excluded items included SLR2, SLR7, SLR8, SLR10, SLR11, SLR14, SLR17, SLR35, and SLR36. These items were eliminated because they had outer loading values below 0.70 and therefore did not satisfy the convergent validity criterion.

Subsequently, convergent validity was further assessed by examining the Average Variance Extracted (AVE) values. An AVE value above 0.50 indicates that a construct can explain more than half of the variance of its indicators, thereby satisfying the criterion for convergent validity (F. J. Hair et al., 2010). The AVE values for each construct are presented in Table 2.

Table 2 AVE Values

Variable	Average Variance Extracted (AVE)
Academic Burnout	0,594
Social media use	0,515
Self-regulated learning	0,638

Based on Table 2, all variables demonstrated Average Variance Extracted (AVE) values above 0.50, with academic burnout scoring 0.594, social media use 0.515, and self-regulated learning 0.638. These results indicate that each construct satisfied the criterion for convergent validity, as the constructs were able to adequately explain the variance of their respective indicators. Furthermore, based on the outer loading values, all indicators within each variable were considered valid and appropriate for inclusion in the research model. The results of the discriminant validity test are shown in Table 3.

Table 3 Fornell-Larcker Values

	Academic burnout	Self-regulated learning	Social media use
Academic burnout	0,771		
Self-regulated learning	-0,497	0,717	
Social media use	0,228	-0,185	0,799

Table 3 presents the results of the discriminant validity assessment using the Fornell–Larcker criterion. The findings indicate that all constructs demonstrated square root AVE values greater than their correlations with other constructs. The square root AVE values were 0.771 for academic burnout, 0.717 for self-regulated learning, and 0.799 for social media use. These results suggest that each construct was empirically distinct from the other constructs in the research model, indicating that the model satisfied the criterion for discriminant validity.

Based on the collinearity test results, the VIF value for the relationship between self-regulated learning and academic burnout was 1.042, while the VIF value for the relationship between social media



use and academic burnout was 1.035. In addition, the interaction effect between self-regulated learning and social media use on academic burnout yielded a VIF value of 1.007. All VIF values were below 5, indicating that the model was free from multicollinearity issues

The results of the reliability test are presented in Table 4.

Table 4: Reliability Test

	Cronbach's alpha	Composite reliability
Academic burnout	0,949	0,955
Self-regulated learning	0,974	0,976
Social media use	0,969	0,979

Table 4 presents the reliability test results, indicating that all variables demonstrated Cronbach's alpha and composite reliability values above 0.70. The academic burnout variable showed a Cronbach's alpha value of 0.949 and a composite reliability value of 0.955. The self-regulated learning variable obtained a Cronbach's alpha value of 0.974 and a composite reliability value of 0.976, while the social media use variable demonstrated a Cronbach's alpha value of 0.969 and a composite reliability value of 0.979. These findings indicate that all constructs in the study exhibited excellent reliability, suggesting that the instruments were internally consistent and reliable for use in this research

2. Evaluation of Structural Model or Inner Model

The results of the inner model analysis are presented in Table 5.

Table 2 Inner Model Result

	β	t statistics	P values	F ²	Q ²	R ²
SMU → AB	0.130	2.845	0.004	0.023		
SLR → AB	-0.480	10.184	0.000	0,304		
SLR x SMU → AB	-0.015	0.319	0.749	0.000		
Academic Burnout					0.171	0.272

Notes: AB = Academic Burnout, SMU = Social Media Use, SLR = Self-regulated Learning. *

Significant at $p < .05$

The coefficient of determination (R^2) analysis indicated that the R-square value for the academic burnout variable was 0.272. This finding suggests that 27.2% of the variance in academic burnout could be explained by social media use and self-regulated learning, while the remaining 72.8% was influenced by other variables beyond the scope of this study.

Furthermore, the predictive relevance test showed that the Q-square value for the academic burnout variable was 0.171. Since the Q-square value exceeded 0, the model can be considered to possess adequate predictive relevance. The effect size (F^2) analysis demonstrated that self-regulated learning had an effect size of 0.304 on academic burnout, indicating a moderate effect category (Hair et al., 2019). In contrast, social media use showed an effect size of 0.023 on academic burnout, which is categorized as a weak effect. Moreover, the effect size (F^2) of the moderating role of self-regulated learning on the relationship between social media use and academic burnout was 0.000, indicating that self-regulated learning did not exert a moderating effect on the relationship between social media use and academic burnout.

Hypothesis testing was conducted by comparing the t-statistic values with the critical t-value and examining the p-values. A hypothesis is considered supported when the p-value is less than 0.05, and the t-statistic exceeds 1.96. Based on Table 5, the first hypothesis, which examined the effect of social media use on academic burnout, yielded a t-statistic value of 2.845 (> 1.96) and a p-value of 0.004 (< 0.05). These findings indicate that social media use had a significant effect on academic burnout. Furthermore, the second hypothesis, which examined the effect of self-regulated learning on academic





burnout, shows a t-statistic value of 10.184 (>1.96) and a p-value of 0.000 (<0.05). These results indicate that self-regulated learning had a significant effect on academic burnout. Meanwhile, the third hypothesis, which examined the moderating role of self-regulated learning on the relationship between social media use and academic burnout, produced a t-statistic value of 0.319 (<1.96) and a p-value of 0.749 (>0.05). This result indicates that self-regulated learning did not moderate the effect of social media use on academic burnout.

Discussion

The findings of this study revealed that social media use had a positive and significant effect on academic burnout. These results indicate that excessive social media use may serve as a psychological risk factor that adversely affects students' academic well-being. The present findings are consistent with those of Evers et al. (2020), who reported that social media use contributed to academic burnout, as excessive use was associated with sleep disturbances that subsequently impaired academic performance and increased academic exhaustion. Similarly, Ma et al. (2025) explained that social media use may trigger distractions, Fear of Missing Out (FoMO), and diminished self-regulation, which can ultimately deplete students' psychological resources and intensify academic burnout. Collectively, these findings suggest that social media use influences not only students' learning behaviors but also their emotional and cognitive functioning.

From a psychological perspective, continuous social media use may increase students' cognitive load. Constant exposure to notifications, continuously updated digital content, and the tendency to engage in multitasking can easily divert students' attention from academic activities. Such conditions may reduce learning concentration, impair sleep quality, and contribute to mental exhaustion. (Verma, 2025) reported that nighttime social media use may disrupt sleep rhythms and lead to chronic fatigue. Furthermore, (Feng et al., 2025) explained that social media use, particularly engagement with short-video applications, may exacerbate anxiety, depression, and academic exhaustion due to heightened digital distraction.

The findings of this study can be explained through the Social Cognitive Theory proposed by. According to this theory, individual behavior is shaped by the reciprocal interaction among personal factors, behavior, and environmental influences, a concept referred to as triadic reciprocal determinism. In the context of this study, social media functions as an environmental stimulus with a strong persuasive appeal through notifications, social feedback, and continuously updated content. These stimuli encourage students to remain engaged in digital activities, thereby reducing their control over learning-related behaviors. Additional evidence supports the present findings by showing that problematic social media use is associated with emotional dysregulation, internalizing symptoms, lower cognitive empathy, and greater personal distress. These psychological difficulties may deplete students' emotional resources and increase vulnerability to burnout. Thus, social media use may contribute to academic burnout not only through distraction and reduced study time but also through its impact on psychological well-being (Accorinti et al., 2025). This explanation is particularly relevant for Pharmacy students who face intensive coursework, laboratory activities, and continuous assessments. When social media is used primarily for emotional relief or escapism, it may intensify emotional fatigue and further exacerbate academic burnout.

However, the results of this study differ from those of the study Tomaszek & Cymerman (2022), who found that general Facebook use did not directly correlate with burnout; however, Facebook intrusion (addictive use) did predict increased burnout over time. These inconsistent findings suggest that the influence of social media on academic burnout may vary depending on participant characteristics, patterns of social media use, and students' academic contexts. Students enrolled in Pharmacy programs typically face substantial academic demands, including intensive laboratory work, report-writing assignments, and complex academic evaluations. Consequently, excessive social media use may place these students at a greater risk of experiencing academic burnout compared to students from other academic disciplines.

Furthermore, the results revealed that self-regulated learning had a negative and significant effect on academic burnout. These results show that good self-regulated learning abilities in students can





reduce their potential to experience academic burnout. This finding is consistent with the findings of Pratiwi et al. (2023), which stated that there is an influence of self-regulated learning on academic burnout. Similarly, Poorgholamy et al. (2020) explained that Self-regulated learning, such as the ability to set goals for better personal development, can help reduce the risk of academic burnout by improving student well-being and satisfaction. Furthermore, students with strong self-regulated learning tend to prioritize academic tasks and responsibilities over other enjoyable activities.

Self-regulated learning influences academic burnout through learning motivation. Students with good self-regulated learning skills will increase their learning motivation, so they are able to set clear and realistic learning goals, thus reducing the possibility of experiencing academic burnout (Nuryana & Wahyuni, 2025). Students who use self-regulated learning strategies are better able to understand learning materials and also become more motivated, responsible, active, and interested in the learning process, thereby reducing the risk of experiencing academic burnout (Izadpanah, 2022).

Moreover, the results revealed that self-regulated learning did not moderate the effect of social media use on academic burnout. This finding indicates that students' self-regulated learning abilities were not sufficient to either weaken or strengthen the influence of social media use on academic burnout. In other words, even students with good self-regulated learning skills remained vulnerable to increased academic burnout when their social media use was high.

The absence of a significant moderating effect suggests that self-regulated learning did not substantially alter the relationship between social media use and academic burnout across different levels of social media engagement. Rather than functioning as a buffering mechanism, self-regulated learning appeared to operate as an independent protective factor, as evidenced by its strong direct negative association with academic burnout. This finding indicates that students with higher self-regulated learning skills generally experienced lower levels of burnout; however, these skills were not sufficient to reduce the detrimental influence of excessive social media use once students were exposed to digital distractions and competing online demands.

Pharmacy programs are characterized by intensive laboratory work, extensive coursework, frequent assessments, and substantial professional competency requirements that persist throughout all academic levels. Consequently, both undergraduate and graduate students are exposed to ongoing academic pressure, although the specific forms of this pressure may vary. Within such a demanding academic environment, the psychological burden associated with social media use may remain relatively similar regardless of students' self-regulatory capacities. This interpretation is particularly relevant in the context of private universities in Banyumas, where students often navigate academic responsibilities alongside organizational involvement, family expectations, financial considerations, and adaptation to technology-enhanced learning environments. The coexistence of these academic and socio-cultural demands may limit the extent to which self-regulated learning can buffer the adverse effects of social media use on burnout.

Social media is commonly used for entertainment, social interaction, information seeking, and escaping from academic pressure (Falahatpisheh, 2025; Herna, 2022; Stamenkovic & Mitrovic, 2023). Social media use that is primarily oriented toward entertainment and emotional regulation tends to provide instant gratification, making it more difficult for students to control the duration of their social media use. As a result, the time and attention that should be allocated to academic activities are reduced, causing self-regulated learning to function less effectively. In Indonesia, pharmacy education places a strong emphasis on laboratory practice, competency-based assessment, and professional preparation. Students enrolled in private universities often face additional challenges related to institutional resources, academic competition, and the need to balance educational responsibilities with financial needs. These contextual characteristics can exacerbate the cumulative burden experienced by students and increase their vulnerability to burnout. Consequently, social media use exerts a stronger influence on academic burnout compared to the educational context.

These findings may also be explained by the Dual Systems Theory proposed by. This theory suggests that individual behavior is influenced by two processing systems: an impulsive system that operates quickly and automatically, and a reflective system that involves cognitive control. Social media use is often dominated by the impulsive system because it provides instant stimuli, such as notifications,



entertainment, and social feedback. The dominance of the impulsive system may weaken individuals' reflective control. Consequently, self-regulated learning, as a form of cognitive control, may not be sufficiently strong to reduce the negative effects of social media use on academic burnout.

The present findings are consistent with emerging evidence indicating that self-regulated learning more commonly functions as a direct predictor of academic outcomes than as a moderator. For example, Du & Wang (2024) reported that self-regulation did not significantly buffer the association between social media use and school burnout, although it independently contributed to better educational adjustment. Similarly, recent studies have shown that self-regulated learning directly promotes academic engagement, persistence, and psychological well-being, while its interactive effects with environmental stressors tend to be inconsistent across contexts. Similarly, the study conducted by Tu et al. (2025) demonstrated that self-regulated learning functioned not as a moderating variable, but rather as a predictor variable. These findings further support the present study, suggesting that self-regulated learning does not consistently function as a moderator in the relationship between social media use and academic burnout.

Knowledge Contribution

This study contributes to the existing body of knowledge in several important ways.

First, it provides additional empirical evidence that social media use has a significant effect on academic burnout among university students. This finding reinforces previous research suggesting that excessive or problematic engagement with social media can increase emotional exhaustion, reduce academic engagement, and negatively affect students' overall academic well-being. By confirming this relationship in the current research context, the study strengthens the understanding of social media as an important factor contributing to academic burnout.

Second, the study confirms that self-regulated learning significantly influences academic burnout. Students with stronger self-regulated learning skills are generally better able to manage their learning processes, set academic goals, monitor their progress, and employ effective learning strategies. These abilities are associated with lower levels of academic burnout, highlighting the importance of self-regulated learning as a personal resource that supports students in coping with academic demands.

Third, this study extends the literature by examining the moderating role of self-regulated learning in the relationship between social media use and academic burnout. Contrary to expectations, the findings indicate that self-regulated learning does not significantly moderate this relationship. This suggests that although self-regulated learning contributes directly to reducing academic burnout, it may not be sufficiently powerful to buffer or offset the adverse effects of social media use. In other words, the negative influence of social media on academic burnout appears to persist regardless of students' levels of self-regulated learning.

Overall, these findings broaden the theoretical understanding of academic burnout by demonstrating that self-regulated learning functions primarily as an independent protective factor rather than as a buffering mechanism. The study also highlights the limitations of relying solely on self-regulated learning to mitigate the negative consequences of social media use. Consequently, future research should investigate other potential moderating variables, such as digital self-control, psychological resilience, mindfulness, social support, or time management skills, to better explain the conditions under which social media use contributes to academic burnout. These findings provide a more comprehensive understanding of the complex factors influencing academic burnout and offer valuable directions for future research and intervention development in higher education.

Recommendation

The limitation of this study lies in the fact that the participants were drawn from only one academic program, namely the Pharmacy program. Therefore, the findings cannot yet be generalized to students from other fields of study. Future research is expected to involve more diverse participants from various academic disciplines while considering demographic variations, such as gender, academic semester, and university background. In addition, future researchers are advised to examine other moderator or mediator variables, such as digital awareness, peer support systems, and academic





workload management, to provide a more comprehensive explanation of the relationship between social media use and academic burnout.

Practical advice: Students are advised to improve their self-regulated learning skills and implement structured time management between academic activities and social media use. Institutions are advised to hold digital literacy workshops and counseling programs to support pharmacy students.

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