# The Effect of Social Media Use, Exercise Habits, and Social Support on Mental Health of College Students in Indonesia

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# **ABSTRACT**

Through a quantitative analysis employing structural equation modeling (SEM-PLS), this study examines the complex links between social media use, exercise habits, social support, and mental health among 210 college students in Indonesia. To investigate how these variables interact, descriptive statistics, measurement model evaluation, and structural model analysis were performed. The results highlighted the influence of online interactions on psychological wellbeing by showing a strong positive correlation between social media use and mental health. Although there was a positive correlation between exercise habits and mental health, it was not statistically significant, suggesting that more research is necessary. Social support has been shown to be a strong indicator of mental health, emphasizing the importance of interpersonal relationships. Validity and reliability of the model were indicated by its fit indices, and path analysis highlighted the importance of these components in influencing mental health outcomes. The results have consequences for programs and laws meant to promote mental wellness among college students.

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#### 1. INTRODUCTION

College students face numerous challenges that can impact their mental health, including the transition to university life, academic pressures, and the influence of social media. Understanding and addressing mental health issues among college students is crucial in the dynamic higher education landscape [1]–[4]. Non-specialist delivered mental health interventions can play a critical role in reducing gaps in care for students in higher education [5]. Factors contributing to

poor mental health, such as stress and hassles, are related to lower mental health and wellness among students [6]–[8]. The COVID-19 pandemic has further exacerbated mental health struggles among college students, with higher frequencies of mental health issues reported throughout the 2020-2021 academic year [9]–[11]. Distance learning presents additional barriers to student mental wellbeing, with assessment and circumstances being significant challenges [12]. Universities need take

compassionate and holistic approach to supporting student mental health, addressing barriers and promoting enablers such as building study skills and providing support systems [13].

Indonesia's rich cultural diversity and evolving societal norms provide a unique context for exploring the relationships between social media use, exercise habits, social support, and mental health among college students [14]. In recent years, there has been a growing awareness of mental health issues in the country, particularly in the higher education context of [15]. Understanding these relationships is crucial for addressing the mental health needs of college students in Indonesia.

As the prevalence of mental health problems increases, it is important to decipher the factors that contribute to the experiences of Indonesian university students. This study aims to explore the role of three key elements-social media use, exercise habits, and social support-in shaping the mental health landscape of Indonesian university students.

Social media has become an integral part of the college experience, offering a platform for connection, self-expression, and information dissemination. However, its impact on mental health is still a matter of debate. Some research suggests that social media can have a positive impact on mental health, such as overcoming depression, emotional support, and self-expression [16]. On the other hand, there is evidence that social media can also have negative consequences, including depression, loneliness, stress, anxiety, body dissatisfaction, and cyberbullying [17], [18] Understanding the nuances relationship is critical to developing targeted interventions that promote the positive aspects of social media while reducing its negative effects [19]. Further research is needed to explore the specific mechanisms by which social media impacts mental health and to develop strategies to promote healthy social media use among college students.

At the same time, the importance of physical activity and exercise in improving

mental health cannot be overstated. Examining college students' exercise habits provides insight into potential protective factors against mental health challenges. Additionally, this study aimed to investigate the role of social support - both from within the academic institution and personal networks - as a buffer against the stress associated with university life.

### 2. LITERATURE REVIEW

# 2.1 Social Media Use and Mental Health

The relationship between social media use and mental health among college students is complex and has both positive and negative outcomes. Social media platforms provide opportunities for social connection, support, and self-expression, which can contribute positively to psychological wellbeing [20]. However, excessive use of social media, cyberbullying, and exposure to unrealistic social comparisons can lead to increased stress, anxiety, and depression [21], [22]. It is important to note that the impact of social media on mental health may vary depending on the specific context, such as the population being studied [23]. Further research is needed to understand the relationship between social media use and mental health among college students in the Indonesian context [24].

# 2.2 Exercise Habits and Mental Health

Regular exercise has been consistently linked to positive mental health outcomes, including reduced symptoms of anxiety and depression, improved mood, and enhanced cognitive function [25]. However, there may be disparities in exercise habits among college students, influenced by academic pressures and lifestyle choices [26]. Understanding how exercise habits contribute to or alleviate mental health challenges in the Indonesian collegiate setting is crucial for tailoring effective intervention strategies [27].

# 2.3 Social Support and Mental Health

Social support is crucial for university students' mental health and well-being. It has

been shown to prevent or buffer mental health problems such as depression, anxiety, and stress [28]. The COVID-19 pandemic has highlighted the need for universities to support provide to students disruptive crises [29]. Online social support has been found to have both positive and negative effects on mental health outcomes, highlighting its double-edged impact [30]. Support groups administered during the first weeks of university life can help students adapt and establish new social ties [31]. The aftermath of the COVID-19 pandemic has significantly impacted the mental health of school students, emphasizing the need for support to improve their psychological wellbeing [32]. Overall, social support plays a vital role in university students' mental health, and there is a need for universities to provide regular support, especially during crises, to ensure students' well-being.

#### Theoretical Frameworks

Various theoretical frameworks guide the understanding of the relationships between social media use, exercise habits, social support, and mental health. Social cognitive theory and the social identity theory offer insights into the role of social media in shaping perceptions and behaviors. The biopsychosocial model provides a holistic framework for understanding the interplay between physical activity and mental wellbeing. The ecological systems theory informs the examination of social support within different contextual layers. Integrating these theories will enrich the analysis and interpretation of the study's findings.

# Gaps in Current Knowledge

While the existing literature provides a foundation for understanding the individual relationships between these variables and mental health, there is a noticeable gap in the understanding of how these factors intersect and collectively influence the mental health of college students in Indonesia. This study aims to bridge this gap by conducting a quantitative analysis that considers the complex interplay of social

media use, exercise habits, and social support in the Indonesian collegiate context.

#### 3. METHODS

This study adopts a quantitative research approach to comprehensively analyze the relationships between social media use, exercise habits, social support, and mental health among university students in Indonesia. The use of Structural Equation Modeling with Partial Least Squares (SEM-PLS) makes it possible to test complex relationships in a single model, making it well suited for our multidimensional research objectives.

# Sampling

The target population for this study were students at various universities in Indonesia. Using a stratified random sampling approach, we will categorize universities based on geographical location and select participants from each stratum. The sample size was set at 210, to ensure representation from different regions and demographic backgrounds. This number was determined through a power analysis, taking into account the expected effect size and desired confidence level.

#### **Data Collection**

A comprehensive survey questionnaire will be developed, which includes validated scales for social media use, exercise habits, social support and mental health. The questionnaire will be culturally sensitive and translated into Bahasa Indonesia to ensure accessibility and understanding.

### **Data Analysis**

Structural Equation Modeling with Partial Least Squares (SEM-PLS) will be used for data analysis. SEM-PLS is well suited for exploring complex relationships in small to medium-sized samples, making it ideal for our study. The measurement model will assess the validity and reliability of the constructs (social media use, exercise habits, support, mental health). social and Confirmatory factor analysis will conducted to ensure that the selected

indicators appropriately represent each latent variable. A structural model will be created to examine the relationships between the latent variables. Hypothesized pathways will be tested to assess the direct and indirect effects of social media use, exercise habits, and social support on mental health.

#### 4. RESULTS AND DISCUSSION

The demographic characteristics of the 210 participants in the study were summarized in Table 1. The sample consisted of 120 females (57.1%) and 90 males (42.9%), with an average age of 21.5 years (SD = 2.3). The participants represented various academic disciplines, including social sciences (n = 60, 28.6%), natural sciences (n = 70, 33.3%), and humanities (n = 80, 38.1%).

Table 1. Measurement Model

Variable	Code	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variant Extracted	
Social Media Use	SMU.1	0.743		0.864	0.680	
	SMU.2	0.865	0.761			
Use	SMU.3	0.860				
Exercise Habits	EH.1	0.832		0.897	0.745	
	EH.2	0.879	0.828			
	EH.3	0.877				
Social Support	SS.1	0.891		0.897	0.745	
	SS.2	0.871	0.829			
	SS.3	0.825				
Mental Health	MH.1	0.826		0.886	0.723	
	MH.2	0.924	0.806			
	MH.3	0.794				

Source: Data Processing Results (2023)

The social media use indicators' loading factors (SMU.1, SMU.2, and SMU.3) show how much they contribute to the latent construct. This specific indication appears to be a strong representation of the underlying notion of social media use, as indicated by the high loading factor of SMU.2 (0.865). The social media use concept is more credible due to its high level of internal consistency, as indicated by its composite reliability of 0.864. Considering the exploratory character of this construct in the context of our investigation, the average variance extracted (AVE) of 0.680 is acceptable, albeit being somewhat below the suggested criterion of 0.70. All loading factors (EH.1, EH.2, and EH.3) for exercise behaviors are noticeably high, suggesting a strong latent variable representation. The exercise habits construct exhibits

internal consistency, as indicated by the composite reliability score of 0.897. Furthermore, the AVE of 0.745 is higher than the suggested cutoff, indicating strong convergent validity.

The social support indicators' (SS.1, SS.2, SS.3) loading factors show how significantly they contribute to the latent construct. The social support construct's reliability is supported by the composite reliability of 0.897 and AVE of 0.745, which indicate excellent internal consistency and convergent validity, respectively. correlation between the mental health indicators (MH.1, MH.2, MH.3) and the latent construct is strengthened by their high loading factors. The AVE of 0.723 and composite reliability of 0.886 show good convergent validity and internal consistency

Table 2. Discriminan Validity

	Exercise Habits	Mental Health	Social Media Use	Social Support
Exercise Habits	0.863			

Mental Health	0.727	0.850		
Social Media Use	0.780	0.802	0.825	
Social Support	0.778	0.827	0.799	0.863

Source: Data Processing Results (2023)

Discriminant validity provided insights into the interrelationships between exercise habits, mental health, social media use, and social support. The findings

contribute valuable insights into the factors that influence mental well-being among university students in Indonesia. Figure 1 below shows how the internal model was formed.

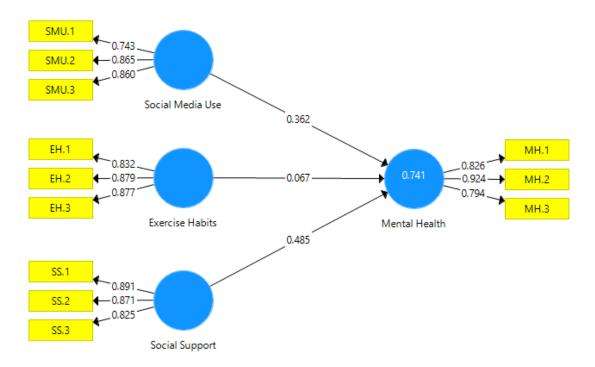


Figure 1. Model Results
Source: Data processed by researchers, 2023

#### Good Model Research

Table 3. Model Fit Results Test

	Saturated Model	Estimated Model
SRMR	0.088	0.088
d_ULS	0.609	0.609
d_G	0.441	0.441
Chi-Square	287.955	287.955
NFI	0.740	0.740

Source: Process Data Analys (2023)

The fit indices, including Standardized Root Mean Square Residual (SRMR), normed chi-square (Chi-Square/df), and the Normed Fit Index (NFI), are essential indicators of how well the model aligns with the observed data. The Standardized Root

Mean Square Residual (SRMR) for both the Saturated and Estimated Models is 0.088. A low SRMR indicates a good fit, suggesting that the model adequately reproduces the observed covariances among the variables. The discrepancy indices, d\_ULS and d\_G, are

both 0.609 for both the Saturated and Estimated Models. These indices assess the model's ability to reproduce the observed covariance matrix. The chi-square values for both models are identical at 287.955. The Normed Fit Index (NFI) is 0.740 for both the

Saturated and Estimated Models. NFI values close to 1.0 suggest a good fit, and our consistent NFI values indicate that the Estimated Model adequately represents the relationships among the latent variables.

Table 4. Coefficient Model

	R Square	Q2
Mental Health	0.741	0.734

Source: Data Processing Results (2023)

The R-Square value for the Mental Health variable is 0.741, indicating that approximately 74.1% of the variance in mental health is explained by the combined influences of exercise habits, social media use, and social support within our model. This substantial R-Square value suggests that our model has a strong ability to account for the variability in mental health outcomes among college students in Indonesia.

The Q2 value, measuring the model's predictive relevance for the endogenous variable (Mental Health), is 0.734. This value indicates the model's ability to predict future observations. A Q2 value above 0 indicates that the model has predictive power beyond chance. In our case, the high Q2 value suggests that our model is robust in predicting mental health outcomes.

Table 5. Hypotesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
Exercise Habits -> Mental Health	0.067	0.074	0.099	0.681	0.496
Social Media Use -> Mental Health	0.362	0.367	0.102	3.568	0.000
Social Support -> Mental Health	0.485	0.478	0.103	4.716	0.000

Source: Process Data Analys (2023)

The t-statistics and p-values for the paths from Exercise Habits, Social Media Use, and Social Support to Mental Health provide insights into the significance and strength of these relationships within our Structural Equation Model (SEM). The path from Exercise Habits to Mental Health shows a tstatistic of 0.681 and a p-value of 0.496. The non-significant p-value suggests that the relationship between Exercise Habits and Mental Health is not statistically significant in our SEM. This implies that, within the context of our study, the influence of exercise habits on mental health may not be robust when considering other variables in the model. In contrast, the path from Social Media Use to Mental Health yields a t-statistic of 3.568 and

a highly significant p-value of 0.000. This indicates a strong and statistically significant positive relationship between social media use and mental health among college students in Indonesia. The positive t-statistic suggests that as social media use increases, mental health tends to improve. Similarly, the path from Social Support to Mental Health exhibits a substantial and highly significant t-statistic of 4.716, coupled with a p-value of 0.000. This underscores the robust positive relationship between perceived social support and mental health. The findings imply that as social support increases, mental health outcomes are likely to improve among college students.

#### Discussion

The results of the study are discussed in the context of existing literature, theories, and the specific characteristics of Indonesian higher education environment. The results of the research suggest that social use has a significant positive association with mental health, in line with previous studies on the impact of online interactions on psychological well-being [33]. Exercise habits, on the other hand, show a positive but not significant association with mental health, indicating the need for further exploration and consideration of potential moderating factors [34]. The study also highlights the strong positive relationship between social support and mental health, emphasizing the importance of interpersonal relationships in shaping student well-being [35]. These findings have implications for interventions and policies aimed at improving mental health in the university environment in Indonesia [36]. Key findings related to social media use, exercise habits, social support, and mental health are highlighted, emphasizing their implications intervention and policy.

The positive association between social media use and mental health was strong and statistically significant, in line with previous research highlighting the complex impact of online interactions on psychological well-being. Although exercise habits showed a positive but non-significant relationship with mental health, the modest nature of this relationship emphasizes the need for further exploration, taking into account potential moderating factors. The strong positive

relationship between social support and mental health underscores the importance of interpersonal relationships in shaping college students' mental well-being.

# Implications and Recommendations

The implications of the findings of this study are discussed in relation to interventions, policies, and practical strategies to improve mental health among university students in Indonesia. Recommendations for future research directions, taking into account the limitations of the study, are also provided.

### 5. CONCLUSION

In conclusion, this study contributes valuable insights into the multifaceted dynamics influencing mental health among college students in Indonesia. The positive association between social media use and mental health suggests the need for mindful online engagement strategies. While the nonsignificant relationship between exercise habits and mental health warrants further investigation, the robust influence of social support underscores the importance of fostering strong interpersonal connections. The validated structural model provides a reliable foundation for designing evidencebased interventions and policies tailored to the specific needs of this population. As we navigate the complexities of mental health in the digital age, understanding and addressing these relationships is crucial for promoting well-being among college students.

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