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A study on the association between social media use and stress levels in students at Can Tho University of Medicine and Pharmacy in 2025

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ABSTRACT

Background: The rapid increase in social media use among university students has raised concerns about mental health, particularly stress. Objective: This study aimed to determine the prevalence of stress and its associated factors related to social media use among students at Can Tho University of Medicine and Pharmacy in 2025. Material and method: A descriptive cross-sectional study was conducted on 1,052 undergraduate and bridging program students during the 2024 - 2025 academic year. Data were collected using a self-administered questionnaire, and stress levels were assessed using the validated Perceived Stress Scale (PSS-10). Logistic regression analysis was performed to identify statistically significant associated factors. Results: The findings showed that 78.7% of students experienced stress, including 19.2% with mild, 42.0% with moderate, and 17.5% with severe levels. Female students were more likely to experience stress than males. Regular students had a 2.43-fold higher risk of stress compared to bridging students, while first and second-year students had a 1.5-fold higher risk than senior students. Single students were 2.08 times more likely to experience stress than married students. Factors related to social media use associated with higher stress included starting use after entering university ($p = 0.042$), using more than 6 hours per day ($p = 0.009$), using more than five applications ($p = 0.039$), and using social media before sleep ($p < 0.001$), during study ($p = 0.004$), during meals ($p < 0.001$) and in leisure time ($p = 0.006$). Conclusion: Stress is a prevalent mental health issue among health science students and is significantly influenced by individual and social media use behaviors.

Keywords: *Can Tho, PSS-10, social media use, stress, student*

1. INTRODUCTION

In the era of rapid digital transformation, social media has become a central feature of modern communication and lifestyle, particularly among young adults and university students. Beyond serving as a platform for interaction, entertainment, and learning, social media engagement has evolved into a habitual behavior that significantly influences emotional and cognitive well-being. In Viet Nam, the Digital 2025 report documented about 76.2 million social media accounts, accounting for 75.2% of the population, with users spending an average of more than two hours per day on platforms such as Facebook, Zalo, and TikTok [1].

While social media provides meaningful opportunities for connection and academic collaboration, growing evidence indicates that its excessive or problematic use may contribute to psychological distress, including stress. A global meta-analysis found that approximately 25% of medical students experience significant stress, with the prevalence peaking during the early academic years [2]. The high academic workload, competitive learning environment, and exposure to clinical settings make medical and health sciences students particularly vulnerable to mental health challenges.

In Viet Nam, research on this topic remains limited. Bui Phuong Hoa et al. (2025) reported that students using social media for more than two hours before sleep experienced significantly higher stress levels than those with lower usage [3]. However, existing studies have primarily focused on general student populations and lack specific evidence addressing stress and social media use among medical and health sciences students - a group facing distinct academic and psychological pressures.

Given that stress can adversely affect learning outcomes, mental health, and even increase dropout intentions, identifying its prevalence and associated factors is crucial for early intervention.

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Therefore, this study aims to assess the level of perceived stress and examine its relationship with social media use among medical and health sciences students in Viet Nam. The findings are expected to provide evidence to inform targeted strategies for promoting mental well-being and responsible social media use in this population.

Based on the above rationale, this study, entitled "A study on the association between social media use and stress levels in students at Can Tho University of Medicine and Pharmacy in 2025" was conducted with the following objectives:

- To describe the patterns of social media use and the prevalence of stress among students at Can Tho University of Medicine and Pharmacy in 2025.
- To analyze the factors associated with social media use and stress levels in this population.

2. MATERIALS AND METHODS

2.1. Study population

The study population consisted of students currently enrolled at Can Tho University of Medicine and Pharmacy, including both regular and transfer programs across 11 disciplines in the academic year 2024 - 2025. The study protocol was approved by the Institutional Ethics Committee in Biomedical Research of Can Tho University of Medicine and Pharmacy under the decision No.25.011.SV/PCT- HĐĐĐ dated May 12, 2025.

- Inclusion criteria:

Students enrolled at Can Tho University of Medicine and Pharmacy who consented to participate in the study, including those in the following majors: General Medicine (531), Pharmacy (102), Dentistry (77), Medical Imaging Technology (20), Medical Laboratory Technology (49), Nursing (47), Midwifery (37), Public Health (16), Traditional Medicine (91), Preventive Medicine (67) and Biomedical Engineering (15).

- Exclusion criteria:

Students were unable to provide reliable responses to the survey questions.

Students who had withdrawn from Can Tho University of Medicine and Pharmacy.

Students who answered the survey following a fixed or patterned order.

Students who submitted incomplete responses.

2.2. Research methods

Study design: A descriptive cross - sectional study.

Sample size: The sample size was calculated using the following formula:

$$n = Z^2_{1-\alpha/2}\frac{\mathrm{px}(1-\mathrm{p})}{d^2}$$

n = required sample size
p = estimated population proportion
d = absolute precision
α = level of significance

We selected p = 0.5 to achieve the maximum sample size, an absolute precision of d = 0.03, and a 95% confidence level (α = 0.05, $Z_{(1-\alpha/2)}$ = 1.96). Substituting these values, the minimum sample size required was 1,067. To account for potential non-response and invalid responses, an additional 10% was added, resulting in a final required sample size of 1,174, rounded up to 1,180 students. In practice, the study successfully collected data from 1,052 students. Although the actual sample size (n = 1,052) was slightly lower than the target (n = 1,180), the achieved sample still represents over 89.2% of the calculated minimum. Participants were drawn from multiple academic years and majors within the medical and health sciences disciplines, ensuring a reasonably diverse and representative sample of the target population. However, the difference between the expected and actual sample size should be considered a limitation that may affect the generalizability of the findings.

Sampling methods:

A multi-stage cluster sampling technique was employed to select participants from 11 disciplines at Can Tho University of Medicine and Pharmacy.

The procedure followed four steps:

+ Step 1: Defined sampling units. The units were classes belonging to 11 disciplines, including: General Medicine (531), Pharmacy (102), Dentistry (77), Medical Imaging Technology (20), Medical Laboratory Technology (49), Nursing (47), Midwifery (37), Public Health (16), Traditional Medicine (91), Preventive Medicine (67) and Biomedical Engineering (15).
+ Step 2: Created a complete list of all classes within these disciplines.
+ Step 3: Randomly select classes from each discipline and cohort using a lottery method.
+ Step 4: Included all students within the selected classes as study participants.

2.3. Study content

The study described several demographic characteristics of students, including gender, class, aca-

demic year, academic performance, training scores, place of residence, and marital status. Social media use: Students were surveyed with questions related to social media use, including: When they started using social media, average daily duration of social media use (hours/day), number of social media applications used, and time of day most frequently used.

Stress: The assessment of students' stress status was conducted using the Perceived Stress Scale - 10 (PSS-10), a widely used tool for evaluating perceived stress in both research and clinical settings [4, 5]. The PSS 10 is a self-administered questionnaire developed to measure the degree to which individuals perceive their lives as unpredictable, uncontrollable, and overloaded over the past month. The scale consists of 10 items, each rated on a 5-point Likert scale ranging from 0 to 4, corresponding to: 0 - Never, 1 - Almost never, 2 - Sometimes, 3 - Fairly often, 4 - Very often. The total score ranges from 0 to 40, with higher scores indicating higher levels of perceived stress. Based on the total score, stress severity is commonly categorized into three levels: Low stress: 0 - 13 points, moderate stress: 14 - 26 points, high perceived stress: 27 - 40 points [5]. The PSS-10 has been demonstrated to possess high validity and reliability with a Cronbach's alpha coefficient of 0.85 [5]. In a study validating the PSS-10 among medical and health sciences students in Hong Kong, exploratory factor analysis revealed a two-factor structure of the scale. The Cronbach's alpha coefficients for the two factors were 0.865 and 0.796, respectively, indicating good internal consistency [6]. In this study, a cut - off score of 14 was applied, meaning that participants scoring 14 or higher were classified as experiencing stress. Accordingly, participants were divided into two main groups: Non-stressed: 0 - 13 points, Stressed: ≥ 14 points. Furthermore, the “stressed” group was subdivided into mild stress: 14 - 19 points, moderate stress: 20 - 25 points, severe stress: 26 - 40 points [7]. Overall, the PSS 10 has been recognized as a reliable, valid, and practical instrument for measuring perceived stress, with broad applicability in epidemiological studies and clinical research [4, 5].

Associated factors: The study explored associations between stress and student characteristics (gender, class, academic year, academic performance, training scores, place of residence, and marital status) as well as patterns of social media use (onset of use, daily duration, number of applications, and time of use during the day).

Data collection methods: Data were collected using structured, self-administered questionnaires distributed through Google Forms. The survey link was shared via institutional email. Each participant was informed about the study's objectives, confidentiality and voluntary participation prior to accessing the questionnaire. To ensure data quality, incomplete questionnaires were automatically excluded. In addition, random checks were performed to identify inconsistent or duplicate entries.

Data processing and analysis: Data were initially exported from Google Forms into Microsoft Excel 2016 for cleaning and coding, then analyzed using SPSS version 26.0. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize demographic characteristics and study variables. The Chi-square test was employed to examine associations between categorical variables.

Multivariate logistic regression analysis: Variables that showed a statistically significant association ($p < 0.05$) in the bivariate analysis were included in the multivariate logistic regression model to identify independent predictors of perceived stress. Adjusted odds ratios with 95% confidence intervals (CI) were calculated. Model fit was assessed using the Hosmer-Lemeshow goodness-of-fit test.

3. RESULTS

3.1. Characteristics of participants

Table 1. Characteristics of participants

Characteristics		Frequency (n)	Percentage (%)
Gender	Male	416	39.5
	Female	636	60.5
Discipline	General Medicine	531	50.5
	Pharmacy	102	9.7
	Dentistry	77	7.3
	Traditional Medicine	91	8.7
	Medical Imaging Technology	20	1.9

Characteristics		Frequency (n)	Percentage (%)
Discipline	Medical Laboratory Technology	49	4.7
	Nursing	47	4.5
	Midwifery	37	3.5
	Public Health	16	1.5
	Preventive Medicine	67	6.4
	Biomedical Engineering	15	1.4
Academic Cohort	46	3	0.3
	47	50	4.8
	48	134	12.7
	49	162	15.4
	50	479	45.5
	36	2	0.2
	37	65	6.2
	38	157	14.9
Academic performance	Excellent	142	13.5
	Very good	213	20.2
	Good	443	42.1
	Average	195	18.5
	Poor	58	5.5
	Failing	1	0.1
Conduct score	Excellent	355	33.7
	Very good	382	36.3
	Good	270	25.7
	Average	43	4.1
	Poor	2	0.2
Living arrangements	Living alone in a dormitory/ rented room	675	64.2
	Living with family	146	13.9
	Living with relatives/ acquaintances/ friends	138	13.1
	Living with a roommate (previously unknown)	93	8.8
Marital status	Single	924	87.8
	Married	128	12.2

Remarks: The study sample comprised 1,052 students, with females representing the majority (60.5%) and males accounting for 39.5%. In terms of academic majors, General Medicine had the largest proportion (50.5%), followed by Pharmacy (9.7%) and Traditional Medicine (8.7%), while other disciplines contributed smaller shares. Most respondents belonged to Cohort 50 (45.5%). Regarding academic performance, the largest proportion achieved a Good level (42.1%), while smaller groups attained Very Good (20.2%) and Excellent (13.5%). In terms of conduct scores, the majority were rated Very Good (36.3%) or Excellent (33.7%). Most students lived independently in dormitories or rented accommodations (64.2%), while only a minority lived with family (13.9%) or with relatives/friends (13.1%). The vast majority of participants were unmarried (87.8%), with family support serving as their primary source of financial assistance (73.8%).

Table 2. Prevalence of stress symptoms among students

No.	Symptoms	Severity									
		Never		Almost never		Sometimes		Fairly often		Very often	
		n	%	n	%	n	%	n	%	n	%
1	In the last month, how often have you been upset because of something that happened unexpectedly?	64	6.1	89	8.5	587	55.8	237	22.5	75	7.1
2	In the last month, how often have you felt that you were unable to control the important things in your life?	65	6.2	145	13.8	588	55.9	182	17.3	72	6.8

No.	Symptoms	Severity									
		Never		Almost never		Sometimes		Fairly often		Very often	
		n	%	n	%	n	%	n	%	n	%
3	In the last month, how often have you felt nervous and stressed?	84	8.0	186	17.7	543	51.6	172	16.3	67	6.4
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	93	8.8	173	16.4	524	49.8	185	17.6	77	7.3
5	In the last month, how often have you felt that things were going your way?	80	7.6	156	14.8	572	54.4	177	16.8	67	6.4
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	103	9.8	206	19.6	525	49.9	161	15.3	57	5.4
7	In the last month, how often have you been able to control irritations in your life?	105	10.0	232	22.1	535	50.9	122	11.6	58	5.5
8	In the last month, how often have you felt that you were on top of things?	115	10.9	237	22.5	521	49.5	129	12.3	50	4.8
9	In the last month, how often have you been angered because of things that happened that were outside of your control?	100	9.5	191	18.2	527	50.1	169	16.1	65	6.2
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	191	18.2	263	25.0	452	43.0	95	9.0	51	4.8

Remarks: The most commonly reported symptoms were anxiety when things did not go as expected (55.8%), fatigue when tasks did not turn out as desired (54.4%), and difficulty managing important problems (55.9%). Restlessness and tension were also reported at high rates (51.6%). Although only 4 - 7% of students experienced these symptoms "very frequently," most students encountered at least one stress-related symptom to some degree.

Table 3. Stress rate among university students

		Frequency (n = 1,052)	Percentage (%)
Stress	With stress	828	78.7
	Non - stress	224	21.3
Stress severity	Mild	202	19.2
	Moderate	442	42.0
	Severe	184	17.5

Remarks: Among 1,052 students, 78.7% experienced stress, higher than the non - stress group (21.3%). Moderate stress was most common (42.0%), followed by mild (19.2%) and severe stress (17.5%).

Table 4. Association between student characteristics and stress status

Characteristic		Stress n (%)		OR (95%CI)	p
		Yes	No		
Gender	Male	304 (73.1)	112 (26.9)	0.580 (0.431 - 0.781)	**< 0.001**
	Female	524 (82.4)	112 (17.6)		
Type of training program	Regular	681 (82.2)	147 (17.8)	2.427 (1.747 - 3.370)	**< 0.001**
	Bridging	147 (65.6)	77 (34.4)		
Academic major	General Medicine	416 (78.3)	115 (21.7)	0.957 0.712 - 1.286)	0.771
	Other disciplines	412 (79.1)	109 (20.9)		
Year of study	First and second years	574 (81.1)	134 (18.9)	1.518 (1.119 - 2.060)	**0.007**
	Later years	254 (73.8)	90 (26.2)		
Academic performance	Excellent/Very good/Good	636 (79.7)	162 (20.3)	1.268 (0.908 - 1.771)	0.164
	Average/ Poor/ Failing	192 (75.6)	62 (24.4)		

Characteristic		Stress n (%)		OR (95%CI)	p
		Yes	No		
Conduct score	Excellent/ Very good/Good	794 (78.8)	213 (21.2)	1.206 (0.601 - 2.420)	0.598
	Average/ Poor	34 (75.6)	11 (24.4)		
Living arrangements	Living alone in dormitory/rented room	534 (79.1)	141 (20.9)	1.069 (0.787 - 1.452)	0.669
	Living with family/relatives/friends	294 (78.0)	83 (22.0)		
Marital status	Single	743 (80.4)	181 (19.6)	2.077 (1.390 - 3.102)	**< 0.001**
	Married	85 (66.4)	43 (33.6)		

Remark: Gender, type of training program, academic year, and marital status were statistically significant factors associated with stress among students ($p < 0.05$). Female students had a higher risk of stress compared to male students (OR = 0.58; 95% CI: 0.431 - 0.781; $p < 0.001$). Regular students showed a 2.4-fold higher risk compared to bridging students. First and second-year students had a 1.5-fold higher risk of stress than students in later years. Unmarried students had a 2.08-fold higher risk compared to married students. The study did not find any statistically significant association between stress and major, academic performance, conduct scores, or living arrangements ($p > 0.05$).

Table 5. Association between social media use and stress status

Social media use characteristics		Stress n (%)		OR (95%CI)	p
		Yes	No		
Starting time of use	Before grade 6	115 (78.2)	32 (21.8)	1	-
	From grades 6 to 9	386 (84.8)	69 (15.2)	0.648 (0.400 - 1.049)	0.077
	From grades 9 to 12	264 (75.9)	84 (24.1)	1.103 (0.681 - 1.786)	0.691
	After entering university	63 (61.8)	39 (38.2)	1.862 (1.021 - 3.397)	**0.042**
Daily usage duration	Less than 1 hour	39 (66.1)	20 (33.9)	1	-
	1 - 3 hours	355 (76.7)	108 (23.3)	1.084 (0.564 - 2.082)	0.809
	3-6 hours	331 (85.8)	55 (14.2)	0.776 (0.385 - 1.566)	0.480
	More than 6 hours	103 (71.5)	41 (28.5)	2.885 (1.304 - 6.383)	**0.009**
Number of social media applications	More than 5	340 (81.9)	75 (18.1)	1.384 (1.015 - 1.887)	**0.039**
	Fewer than 5	488 (76.6)	149 (23.4)		

Remarks: The analysis showed a statistically significant association between the age at which students first began using social media, daily usage duration, number of social media accounts, time of daily access, and stress levels among students. Specifically, students who began using social media after entering university had a higher risk of stress compared with those who started before 6th grade ($p = 0.042$). Students who used social media for more than 6 hours per day had a higher risk of stress than those who used it for less than 1 hour ($p = 0.009$). Additionally, students with more than five social media accounts had a higher stress risk than those with fewer than five accounts ($p = 0.039$).

Table 6. Association between time of daily access and stress status

Social media use characteristics			Stress n (%)		OR (95%CI)	p
			Yes	No		
Time of daily access	Upon waking up	Yes	308 (80.2)	76 (19.8)	1.153 (0.846 - 1.573)	0.367
		No	520 (77.8)	148 (22.2)		
	Before going to sleep	Yes	473 (82.8)	98 (17.2)	1.713 (1.272 - 2.307)	**< 0.001**
		No	355 (73.8)	126 (26.2)		

Social media use characteristics			Stress n (%)		OR (95%CI)	p
			Yes	No		
Time of daily access	When receiving notifications	Yes	396 (79.8)	100 (20.2)	1.137 (0.845 - 1.529)	0.397
		No	432 (77.7)	124 (22.3)		
	While studying/working	Yes	139 (87.4)	20 (12.6)	2.058 (1.256 - 3.373)	**0.004**
		No	689 (77.2)	204 (22.8)		
	While eating	Yes	354 (84.7)	64 (15.3)	1.867 (1.355 - 2.574)	**< 0.001**
		No	474 (74.8)	160 (25.2)		
	During free time	Yes	665 (80.5)	161 (19.5)	1.596 (1.139 - 2.238)	**0.006**
		No	163 (72.1)	63 (27.9)		
	At anytime of the day	Yes	193 (83.2)	39 (16.8)	1.442 (0.985 - 2.111)	0.059
		No	635 (77.4)	185 (22.6)		

Remarks: Usage before bedtime, while studying or working, during meals, and during leisure time was significantly associated with higher stress, with ORs ranging from 1.6 to 2.06 ($p < 0.01$).

4. DISCUSSION

4.1. Prevalence of stress among students at Can Tho University of Medicine and Pharmacy

The present study revealed that 78.7% of students experienced stress, with moderate stress accounting for 42% and 17.5% classified as severe stress. These findings indicate a substantial psychological burden among medical and health sciences students, reflecting the high academic demands, rigorous training, and societal expectations inherent in these programs.

This result is consistent with the research results of Tran Thi Hoang Yen et al. (2021), who found that 78.2% of 602 medical students at Can Tho University of Medicine and Pharmacy experienced stress [7].

In comparison, Pham Trung Tin (2017) found a 77.6% prevalence of stress among medical students (mild: 33.6%, moderate: 31.2%, severe: 5.8%) [8], which was slightly lower than in our study. Notably, the proportion of severe stress in our sample was approximately three times higher than that reported by Pham Trung Tin, possibly reflecting an increasing psychological burden among medical students in recent years.

Comparatively, international studies have reported similar findings. For instance, Sari et al. (2020) [9] found that 77.65% of Indonesian medical students experienced moderate stress, while 13.72% experienced severe stress. This result is consistent with our study, suggesting that high levels of stress among medical students are a common phenomenon across different educational contexts, particularly in programs with demanding academic and clinical requirements.

Overall, these findings indicate that the prevalence of stress among Vietnamese medical students consistently exceeds 75%, with a rising trend in severe stress levels over time. Taken together, these findings emphasize that stress among medical students remains highly prevalent both nationally and internationally, with an upward trend in severity. This highlights the urgent need for effective psychological support systems and institutional interventions to promote mental well-being and academic resilience among medical students.

4.2. Factors associated with stress among students

Gender: Our study found that the prevalence of stress was higher among female students compared to male students (OR = 0.58; 95% CI: 0.431 - 0.781; $p < 0.001$), suggesting that gender is a significant factor associated with stress levels. This aligns with previous Vietnamese studies [10, 11], which reported a 1.56 to 4.7-fold increased risk of stress among females. This heightened susceptibility may stem from greater emotional sensitivity and intensified academic performance concerns. Furthermore, sociocultural expectations often impose a "dual pressure" on female students, exacerbating their psychological burden in a competitive academic environment.

Type of training program: Regular students showed a 2.4-fold higher risk compared to bridging students. Stang et al. (2025) [12] reported that regular students experience significantly higher stress levels than bridging students, particularly in emotional strain, conflict, and energy depletion. This finding challenges the assumption that psychological pressure is proportional to total study time, highlighting instead the role of intensive workload and coping strategies. Regular students may be more prone to exhaustion due to limited separation between social roles, whereas part-time students often possess better resource management skills, mitigating the adverse effects of

academic stress.

Academic year: Junior students (first and second years) exhibited a 1.5-fold higher risk of stress compared to their senior counterparts, highlighting the precarious nature of the initial adaptation phase in medical education. This finding aligns with Wahid et al. (2025), who identified transition-related academic stress as a significant burden for early-stage students [13]. This vulnerability is likely multifaceted, involving the shift from high school pedagogy, geographic displacement from family, and the dual demand of concurrent theoretical and hospital-based training. Conversely, senior students appear to possess superior resilience and more refined coping mechanisms, likely cultivated through prolonged clinical exposure and academic socialization.

Marital status: Marital status and the timing of initial social media use appear to be important factors associated with student stress, although previous research has not explored these relationships in depth. In our study, unmarried students exhibited a 2.08-fold higher risk of stress compared with their married peers. This finding may reflect differences in social support networks: married students often benefit from stable interpersonal relationships and emotional support, which can buffer against academic and social stressors, whereas unmarried students may rely more heavily on digital interactions, which could be less effective in mitigating stress.

First began using social media: The timing of social media adoption significantly influenced stress levels, with late adopters (post-university entry) exhibiting a higher risk compared to those who started before the 6th grade ($p = 0.042$). This suggests that early exposure may facilitate the development of robust digital literacy and self-regulation skills, fostering more adaptive coping mechanisms. Conversely, individuals adopting social media during the critical transition to higher education may struggle to balance the cognitive demands of digital engagement with new academic pressures. This diminished digital adaptability likely precipitates maladaptive usage patterns and heightened psychological vulnerability.

Daily usage duration: Students who used social media for more than 6 hours per day had a higher risk of stress than those who used it for less than 1 hour ($p = 0.009$). This is in line with international evidence, such as the study by Shiraly et al. (2024) [14] in BMC Medical Education, which demonstrated that excessive social media use is associated with increased psychological distress and reduced academic performance. These findings underscore that prolonged social media engagement is a common risk factor affecting mental health among medical students.

Number of social media accounts: Students with more than five social media accounts had a higher stress risk than those with fewer than five accounts ($p = 0.039$). A 2025 study at Dalat University found that social media use was associated with mental health issues such as anxiety, depression, and stress among students, with higher and more frequent use showing stronger negative effects [15], which may be explained by several factors. Managing multiple accounts often increases cognitive load and social pressure, as users must constantly monitor notifications, maintain online presence, and navigate diverse social norms across platforms. This continuous engagement can lead to information overload and reduced opportunities for mental rest. Moreover, frequent exposure to social comparison, conflicting content, and negative online interactions may further heighten emotional strain.

Time of daily access: Context-specific social media engagement (during academic tasks, meals, and leisure) was significantly associated with elevated stress (OR = 1.6 - 2.06; $p < 0.01$). This digital encroachment into academic activities mirrors findings by Huey and Giguere (2022), where constant connectivity fosters behavioral distraction and "separation anxiety" from devices [16]. Furthermore, purposeless usage during leisure-driven by boredom-acts as a maladaptive coping strategy that heightens emotional distress. The most critical temporal pattern identified was pre-bedtime usage [17], which exhibited a strong positive correlation with poor sleep quality ($r = 0.65$). This nocturnal engagement induces prolonged psychological arousal, disrupting circadian rhythms and creating a bidirectional link between sleep deprivation and chronic stress.

4.3. Psychological mechanisms linking social media use and stress

The positive correlation between social media engagement and stress levels observed in this study can be elucidated through several interrelated psychological and physiological mechanisms. These pathways suggest that the impact of digital platforms is not merely a function of exposure time, but rather a consequence of maladaptive cognitive and physiological processing.

Upward social comparison and self-discrepancy: A primary driver of emotional distress identified in our analysis is upward social comparison. Users are frequently exposed to the curated "highlight reels" of others' lives, which often trigger feelings of inadequacy, envy, and a perceived discrepancy between their "actual self" and the "ideal self" portrayed online. This chronic self-evaluation against unrealistic standards significantly contributes to depressive symptoms and psychological strain. This is particularly salient among university students, who are in a critical developmental stage of identity formation and are highly susceptible to peer-related social pressures.

Information overload and technostress: The "always-on" nature of social media facilitates information overload, occurring when the volume of digital stimuli exceeds an individual's cognitive processing capacity. This phenomenon, often categorized as technostress, results in cognitive fatigue and prevents necessary mental recovery. For health science students, who already face rigorous academic demands, this continuous connectivity diminishes the psychological "detachment" required to mitigate burnout. The frequent exposure to conflicting content and the pressure to multitask across multiple platforms further heighten emotional exhaustion and reduce opportunities for mental rest.

FOMO and compulsive engagement: The Fear of Missing Out (FOMO) serves as a potent mediator between social media use and anxiety. Defined as a pervasive apprehension that others might be having rewarding experiences from which one is absent, FOMO contributes directly to stress by maintaining a cycle of compulsive engagement. This state of constant hypervigilance keeps the individual in a loop of anticipatory anxiety, which reinforces stress reactivity and diminishes overall life satisfaction. Soraci et al. (2025) [18] emphasize that this problematic use pattern makes it increasingly difficult for students to detach from the digital environment, even when it becomes detrimental to their well-being.

Sleep displacement and circadian disruption: Physiologically, late-night social media consumption exacerbates stress through sleep disturbance. Nocturnal screen exposure, particularly the blue light emitted by devices, suppresses melatonin production and disrupts circadian rhythms [19]. Inadequate sleep quality serves as a significant biological stressor that impairs emotional regulation and heightens the physiological response to daily academic pressures. This creates a bidirectional cycle where exhaustion leads to increased stress, which in turn encourages further maladaptive social media use as a passive coping mechanism.

4.4. Novelty and contribution

While these findings align with the high prevalence of stress reported in previous literature, this study offers several distinctive contributions that deepen our understanding of the evolving relationship between digital habits and mental health in the medical education context.

Large-scale study with a specific population: This study is among the first large-scale investigations in Vietnam (n = 1,052) to examine the association between stress and social media use among health science students. Given that medical and pharmacy students face unique academic and clinical pressures, these findings offer valuable reference data for developing tailored psychological support strategies in medical universities.

Novel finding regarding the timing of social media adoption: A distinctive contribution of this study lies in identifying that students who started using social media “after entering university” exhibited a higher risk of stress compared with those who had used it “since early adolescence (before grade 6)”. This may be attributed to the early users having developed stronger digital literacy and self-regulation skills. Conversely, late adopters may experience poorer adaptation and heightened social comparison, especially when first exposed to social media during a demanding academic transition.

Emphasis on “context of use” rather than “duration of use”: Beyond measuring screen time, this study highlights that the context in which social media is used plays a more significant role in stress outcomes. Severe-stress contexts ($p < 0.01$) included using social media during studying or working, while eating, before sleeping, or during leisure time. Additionally, managing multiple accounts (over five platforms) contributed to cognitive overload and increased psychological strain.

Worrisome trend of increasing severe stress levels: By comparing with prior datasets from the same institution, this research provides temporal insight into stress prevalence. While overall stress levels remained relatively stable, the proportion of students experiencing severe stress has risen substantially. This upward trend suggests that post-COVID-19 challenges and the intensified pace of digital transformation may be exacerbating mental health burdens among students

Practical implications for student management and intervention: Instead of recommending generic advice such as "reduce social media use," this study proposes targeted strategies. Priority support should focus on first- and second-year students and full-time cohorts, who are 1.5 - 2.43 times more likely to experience stress. Intervention efforts should emphasize time management training and promoting "digital disconnection" habits during essential activities such as studying, eating, and sleeping to safeguard mental well-being.

Practical implications

- Universities should develop mental health education programs and social media time-management strategies for students.
- Students should be encouraged to limit social media use before bedtime and during academic activities to mitigate stress.
- Psychological support services should prioritize first and second-year students who appear to be more vulnerable.

Limitations

This study's cross-sectional design limits causal inference; the observed associations cannot establish temporal direction. Additionally, the reliance on self-reported data may introduce recall and social desirability bias, and conducting the study at a single university limits generalizability. Consequently, the study can estimate prevalence but not incidence, and it is less suitable for investigating rare conditions.

Moreover, as a descriptive cross-sectional study, this research only captures a snapshot of students' psychological status and social media behaviors at a single point in time. Therefore, it cannot account for dynamic fluctuations in stress levels or changes in online habits that may occur during different academic periods or under varying social conditions. The study also relies heavily on subjective self-assessment, which might not fully reflect actual behavioral patterns or physiological indicators of stress. Another limitation lies in the absence of objective measurements, such as digital tracking data or biomarkers (e.g., sleep quality, cortisol levels), which could have provided a more comprehensive understanding of the relationship between social media use and psychological well-being. Finally, the cross-sectional and descriptive nature of the design restricts the ability to explore causal mechanisms or the temporal sequence between exposure (social media use) and outcomes (stress), suggesting the need for longitudinal or mixed-methods research in future studies.

Recommendations for future research

- Longitudinal studies are needed to determine causal pathways between social media use and stress.
- Future investigations should include samples from multiple universities to enhance external validity.
- Qualitative methods (eg, in-depth interviews) are recommended to better understand students' personal experiences with social media and its psychological impacts.

5. CONCLUSION

Stress was highly prevalent among students at Can Tho University of Medicine and Pharmacy, with 78.7% experiencing symptoms of varying severity. Female students, those in the regular training program, first and second-year students, and single students were more likely to experience stress. Excessive social media use - particularly more than six hours per day, using over five applications, and engaging before sleep, while studying, eating, or during leisure - was significantly associated with higher stress levels. These findings emphasize the need for awareness programs on healthy social media habits and institutional support to improve students' mental well-being.

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REFERENCES

[1] We Are Social and DataReportal, "Digital 2025: Vietnam," DataReportal, 2025. [Online]. Available: https://datareportal.com/reports/digital-2025-vietnam. [Accessed: Jan. 31, 2026].

[2] L. S. Rotenstein *et al.*, "Prevalence of depression, depressive symptoms, and suicidal ideation among medical students: A Systematic Review and Meta-Analysis," *JAMA*, vol. 316, no. 21, pp. 2214-2236, 2016. DOI: 10.1001/jama.2016.17324.

[3] B. P. Hoa, N. H. Yen, N. T. Van Anh, T. V. Long, N. H.

Long, and H. T. N. Anh, "Stress associated neglect and negative reactions on social media among first-year medical doctor students in 2024," *Journal of Community Medicine*, vol. 66, no. 1, pp.114-119, 2025. DOI:10.52163/yhc.v66ienglish.2762.

[4] S. Cohen, T. Kamarck, and R. Mermelstein, "A global measure of perceived stress," *Journal of Health and Social Behavior*, vol. 24, no. 4, pp. 385-396, 1983. DOI: 10.2307/2136404.

[5] E.-H. Lee, "Review of the psychometric evidence of the perceived stress scale," *Asian Nursing Research*, vol. 6, no. 4, pp. 121-127, 2012. DOI: 10.1016/j.anr.2012.08.004.

[6] J. Y. Chen *et al.*, "Validation of the perceived stress scale (PSS-10) in medical and health sciences students in Hong Kong," *The Asia Pacific Scholar*, vol. 6, no. 2, pp. 31-37, 2021. DOI: 10.29060/taps.2021-6-2/oa2328.

[7] T. T. H. Yen, N. H. H. Anh, H. U. Giao, L. K. Huy, D. Rom, P. T. Tin, & L. M. Huu, "Stress and some related factors among medical students at Can Tho University of Medicine and Pharmacy in 2021," *Cantho Journal of Medicine and Pharmacy*, vol. 54, pp. 31-37, 2023. DOI: 10.58490/ctump.2022i54.352

[8] P. T. Tam, P. T. Tín, "*Study on stress situation and evaluation of intervention outcomes among students of Preventive Medicine at Can Tho University of Medicine and Pharmacy in the academic year 2016-2017*," Master's thesis in Public Health, Can Tho University of Medicine and Pharmacy, 2017.

[9] S. K. Sella *et al.*, "The Relationship Between Social Media Addiction And Stress Level Among Medical Student In Lampung University," *Medical Profession Journal of Lampung*, vol. 13, no. 4, pp. 655-664, 2023. DOI: 10.53089/medula.v13i4.763.

[10] P. N. Hanh, N. H. Vi, L. T. H. Ha, "Stress of students at Tien Giang Medical College in 2018 and some related factors," *Journal of Health and Development Studies,* vol. 4, no. 2, pp. 16-25, 2018.

[11] N. V. Thong, M. S. Duong, N. T. M. Ngoc, T. H. Phuong, & N. T. P. Hien, "The prevalence and associated factors of stress among medical students at Can Tho University of Medicine and Pharmacy in 2024," *Journal of Medical Research*, vol. 191, no. 6, pp. 405-413, 2025. DOI: 10.52852/tcncyh.v191i6.3288

[12] P. Stang, M. Weiss, P. Jaensch, S. Scholz, "Exploring stress and recovery among students: examining the role of study modes," *Discover Mental Health,* vol. 5, no. 1, pp. 1-10*,* 2025. DOI:10.1007/s44192-025-00186-6.

[13] M. Wahid, S. K. Triastari, S. Amirah, & R. T. Zhuhra, "Exploring the Adaptation Processes of First-Year Medical Students: A Mixed-Method Study," *Education in Medicine Journal*, vol. 17, no. 1, pp. 129-148, 2025. DOI: 10.21315/eimj2025.17.1.10.

[14] R. Shiraly, A. Roshanfekr, A. Asadollahi, and M. D. Griffiths, "Psychological distress, social media use, and academic performance of medical students: the mediating role of coping style," *BMC Medical Education*, vol. 24, no. 1, p. 999, 2024. DOI: 10.1186/s12909-024-05988-w.

[15] V. T. T. Dung, & N. T. T. Duyen, "Social media use and students' mental health," *VNU Journal of Science: Policy and Management Studies*, vol. 40, no. 4, pp. 69-82, 2024. DOI: 10.25073/2588-1116/vnupam.4514.

[16] M. Huey, D. Giguere, "The Impact of Smartphone Use on Course Comprehension and Psychological Well-Being in the College Classroom," *Innovative Higher Education,* vol. 48, no. 3, pp. 527-537, 2023. DOI: 10.1007/s10755-022-09638-1.

[17] A. Alkaabba *et al.*, "The Digital Dilemma: Patterns of Screen Time, Sleep Quality, and Mental Health Among Saudi University Students," *Cureus*, vol. 17, no. 9, p. e91882, 2025. DOI: 10.7759/cureus.91882.

[18] P. Soraci, Z. Demetrovics, N. Bevan, et al, (2025) "FoMO and Psychological Distress Mediate the Relationship Between Life Satisfaction, Problematic Smartphone Use, and Problematic Social Media Use," *International Journal of Mental Health and Addiction*, pp. 1-30, 2025. DOI: 10.1007/s11469-024-01432-8.

[19] J. C. Levenson, A. Shensa, J. E. Sidani, J. B. Colditz, & B. A. Primack, "The association between social media use and sleep disturbance among young adults," *Preventive Medicine*, vol. 85, pp. 36-41, 2016.

Nghiên cứu mối tương quan giữa việc sử dụng mạng xã hội và mức độ căng thẳng ở sinh viên Trường Đại học Y Dược Cần Thơ năm 2025

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TÓM TẮT

Đặt vấn đề: Sự gia tăng nhanh chóng của việc sử dụng mạng xã hội trong sinh viên đặt ra nhiều lo ngại về sức khỏe tâm thần, đặc biệt là stress. Mục tiêu: Nghiên cứu này nhằm xác định tỷ lệ stress và các yếu tố liên quan giữa việc sử dụng mạng xã hội với mức độ stress ở sinh viên Trường Đại học Y Dược Cần Thơ năm 2025. Đối tượng và phương pháp nghiên cứu: Thiết kế nghiên cứu cắt ngang mô tả thực hiện trên 1,052 sinh viên hệ chính quy và liên thông trong năm học 2024 - 2025. Dữ liệu được thu thập bằng bộ câu hỏi tự điền, sử dụng thang đo PSS-10 để đánh giá mức độ stress. Phân tích hồi quy logistic được áp dụng nhằm xác định các yếu tố liên quan có ý nghĩa thống kê. Kết quả: Cho thấy 78.7% sinh viên có biểu hiện stress, trong đó 19.2% mức nhẹ, 42.0% mức trung bình và 17.5% mức nặng. Nữ giới có nguy cơ stress cao hơn nam. Sinh viên hệ chính quy có nguy cơ stress cao gấp 2.43 lần so với hệ liên thông, sinh viên năm 1 - 2 cao hơn 1.5 lần so với các năm và sinh viên độc thân có nguy cơ stress cao gấp 2.08 lần so với sinh viên đã kết hôn. Các yếu tố liên quan đến việc sử dụng mạng xã hội gồm: Bắt đầu sử dụng sau khi vào đại học ($p = 0.042$), dùng trên 6 giờ/ngày ($p = 0.009$), sử dụng hơn 5 ứng dụng ($p = 0.039$), dùng trước khi ngủ ($p < 0.001$), trong lúc học ($p = 0.004$), khi ăn ($p < 0.001$) và trong thời gian rảnh ($p = 0.006$). Kết luận: Stress là vấn đề phổ biến ở sinh viên khối ngành sức khỏe, chịu ảnh hưởng đáng kể bởi các yếu tố cá nhân và hành vi sử dụng mạng xã hội.

Từ khóa: *Cần Thơ, PSS-10, sinh viên, stress, sử dụng mạng xã hội*

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