A Model of Factors Influencing Social Media Addiction in University Students

Phayam Kandee, Darawan Thapinta, Sombat Skulphan, Petsunee Thungjaroenkul*

Abstract: Social media addiction is an important mental health concern with steadily increasing prevalence in young people along with physical, psychological, and academic issues. To reduce social media addiction, an understanding about its influencing factors is required. This cross-sectional study aimed to develop and test a model of factors influencing social media addiction in university students. Multi-stage sampling was used to obtain 550 undergraduate students from five faculties of a public university in Thailand. Data were collected using a demographic data form, the Bergen Social Media Addiction Scale, the Internet Self-efficacy Scale, the Internet Use Expectancies Scale, the Self-regulation Scale, the Center for Epidemiologic Studies Depression Scale, a neuroticism subscale and an extraversion subscale of the Neuroticism Extraversion Openness to experience Five-Factor Inventory, the Multi-Dimensional Scale of Perceived Social Support, and the Subjective Norm Scale. SPSS version 26.0 and the AMOS program were applied for model testing.

Findings revealed that the modified model fitted with empirical data and explained 86% of variance in social media addiction. Depression was the strongest predictor influencing social media addiction both directly and indirectly via Internet use expectancies and self-regulation. Subjective norm directly and indirectly influenced social media addiction via self-regulation. Extraversion and neuroticism directly influenced social media addiction whereas Internet self-efficacy and perceived social support had no direct or indirect effects on social media addiction. In conclusion, personal and environment factors together exert powerful effect on social media addiction. Therefore, nurses and other health professionals can design and test the effectiveness of interventions to reduce social media addiction by decreasing depression, changing subjective norm to improve self-regulation and reduce Internet use expectancies, and screening and modifying extraversion and neuroticism personality.

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Introduction

Social media, a group of platforms on the Internet, has become a significant influence on adolescents' daily life. Previous studies indicated high prevalence rates of social media addiction in university students.[1-3] In Thailand, adolescents in the 15-24 age range account for the highest number of Internet users, and virtually all of them use social media.[4] However, due to limited capacity or lack of self-regulation,[5] adolescents exhibit a lack of time management when using social media.

With no awareness restraints of any kind, users of social media developed unabated habit-forming behavior leading to addictive behaviors. Social media addiction is defined as engagement in online social media, including salience, conflict, mood modification, withdrawal, tolerance, and relapse.[6]

This was especially true in Thailand, ranging from as much as 26.10% to 34.93%.[7,8] Social media addiction is a frequent cause of sleep deprivation,[9] drug consumption,[2] and poor academic performance.[1,2,10] Additionally, it can lead to mental health issues, including depression, anxiety, stress,[1-3,9] harassment, and cyber victimization.[2] Therefore, it is encouraged to develop a better in-depth understanding of the factors influencing social media addiction to reduce these behaviors and ensure a healthier level of social media use.

Social media addiction is a complex phenomenon that remains controversial in terms of cause and treatment. Importantly, social media addiction varies across different socio-economic classes and geographical regions based on educational systems, political contexts, social structures, and technological relationships.[11] Although numerous studies have been conducted to examine social media addiction, this issue is not well understood from the perspective of university students. Moreover, model testing of direct and indirect relationships among factors influencing social media addiction is still debated and should be explored within Thai context. Thus, this study aimed to test the causal model of social media addiction to obtain a better understanding of multiple factors and their pathways influencing social media addiction for establishing effective programs in order to reduce or minimize social media addiction in Thai university students.

Literature Review and Conceptual Framework

Social Cognitive Theory (SCT)[12] and a literature review were used to develop and test the Causal Model of Social Media Addiction in University Students. The SCT[12] was extensively used in nursing research such as substance use[13] and social media addiction.[10,14] Based on SCT,[12] human behavior is described as reciprocal determinism between environmental and personal determinants. In this study, the subset of reciprocal determinism concept in the SCT[12] was applied to investigate the interaction of the personal factors and environmental factor from comprehensive literature review that had causal effects on social media addiction behavior in university students. Empirical evidence from the literature has revealed many factors as the significant predictors of social media addiction among university students. The present study selected and examined factors, which can be modified by nursing roles in order to prevent university students from addiction to social media.

In the framework, social media addiction is derived from the behavior that is influenced by both personal factors and environmental factors. Internet self-efficacy, Internet use expectancies, self-regulation, depression, neuroticism personality, extraversion personality, and perceived social support are derived from personal factors, whereas subjective norm is derived from environmental factor. All of these factors are significant in leading to behavior of social media addiction.

Internet self-efficacy refers to one's self-confidence about the belief in one's abilities to organize and apply various Internet tasks associated with social media to produce overall achievements.[15] That means individuals with high perceived Internet self-efficacy tend to utilize a higher degree of social media, which contributes to a greater level of social media addiction.

Internet use expectancies refer to one's own self-judgment regarding consequences of using social media, including avoidance of negative feeling and obtaining positive experience.[16] Individuals with high Internet use expectancies believe that social media use can help them avoid negative feelings while simultaneously leading to a positive experience. The consequences

include loss of control, poor time management, and cravings.[16] Internet use expectancies had a positive effect on social media addiction.[16]

Self-regulation refers to an ability to control one's own thoughts, affects, and performance against their demands and external reinforcement when interacting in specific situations.[12] People can control their choices, feelings, and behaviors via the self-regulation process.[12] Thus, with deficient self-regulation, these individuals tend to exhibit problematic behaviors, which include social media addiction. Self-regulation had a negative influence on social media addiction.[17]

Depression refers to the appearance of symptoms of depression: sadness, emptiness, irritation, lack of enjoyment in activities, guilt and loss of self-worth, loss of concentration, fatigue, low energy, sleep deprivation, weight fluctuation, altered weight or disturbed appetite.[18] Depression was positively correlated with deficient social skills, which, in turn, encouraged people to seek out social media for a psychological incentive and online social interactions.[19] This further contributed to excessive use of or addiction to social media. Depression also exerts a positive correlation with high Internet use expectancies for satisfaction of one's online needs, resulting in social media addiction. Moreover, depression causes a higher level of deficient self-regulation,[20] which leads to an increase in social media addiction.

Neuroticism refers to an individual's characteristic patterns that reflect anxiety, anger, hostility, depression, impulsiveness, vulnerability, sensitivity, inconstancy, and fluctuation.[21] An individual with high neuroticism will have higher anxiety concerning their interpersonal relationships and use of social media.[22] This, in turn, will exacerbate their needs to continue regular contact with others. Neuroticism personality was significantly positively associated with social media addiction.[23]

Extraversion refers to an individual's characteristic patterns that reflect expansiveness, sociability, activeness, assertiveness, enthusiasm, and talkativeness.[21] An individual with an extraversion personality will excessively use social media as he or she craves for more social interaction. Extraversion personality was positively associated with social media addiction.[22]

Perceived social support refers to perceived emotional support from family, friends, and significant others.[24] When having psychological issues, individuals turn to others for emotional support,[25] which helps them feel that they have sufficient interpersonal networks. They would not need to seek further interpersonal networks through social media and thus tend to use social media in moderation. In contrast, individuals who lack traditional interpersonal networks and support will turn to social media. This may lead to social media addiction. Perceived social support had a negative association with social media addiction.[25]

Subjective norm is a perception about individuals on whether their significant others wish them to perform a behavior of social media use, and whether they desire to follow those wishes. Individuals who positively evaluated the use of social media and believed that it was popular to do so among their significant others exhibited more addictive tendencies for social media use.[26] Based on SCT, self-regulation processes are shaped by either personal or environmental factors.[12] Hence, subjective norm, as an environmental influence, can weaken self-regulation and also shape one's self-efficacy. Social influence is a significant source of verbal persuasion,[12] which assimilates to the concept of subjective norm. Therefore, when individuals perceive social media use as a desired behavior by society and are persuaded to perform such behavior, they are likely to instill more confidence in their ability to use Internet or Internet self-efficacy, and actually perform social media use behavior. An increased use of social media can lead to addiction.

In this study, a causal model of social media addiction was developed to examine the positive or negative direct and indirect effects of Internet self-efficacy, Internet use expectancies, self-regulation, depression, neuroticism personality, extraversion personality, perceived social support, and subjective norm (**Figure 1**) on social media addiction. It was hypothesized that this model could fit with the data.

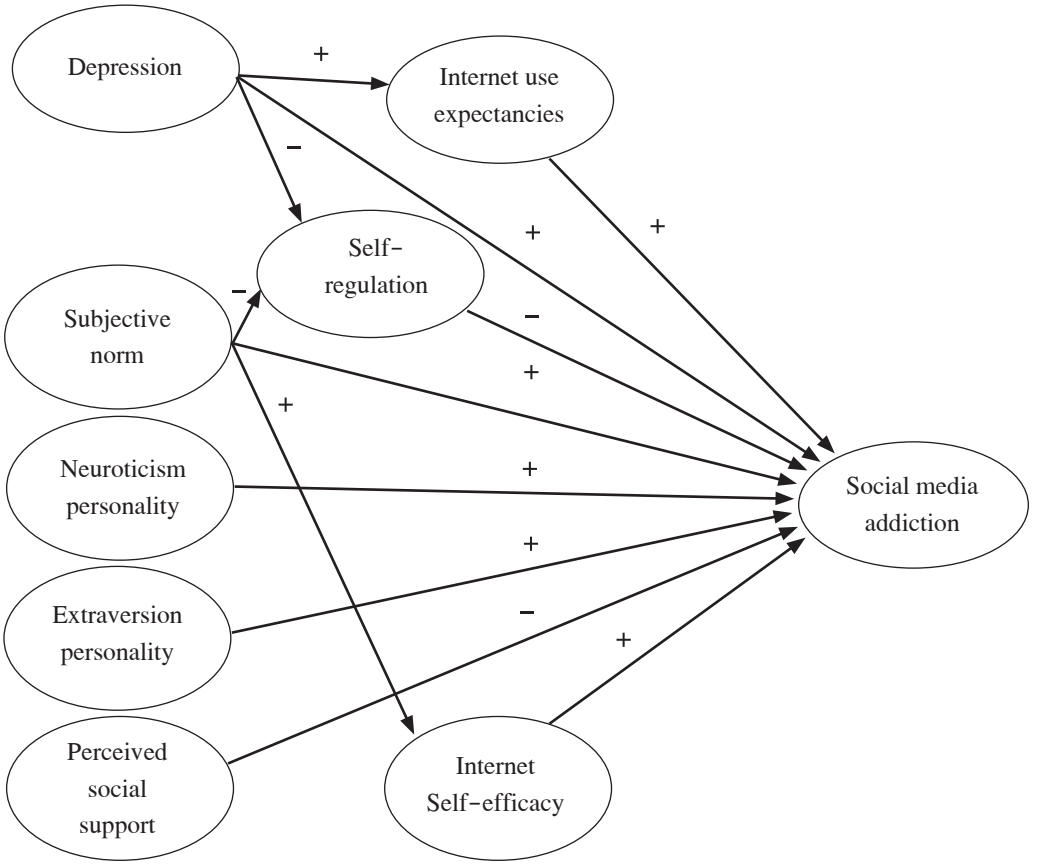


Figure 1. Hypothesized model of social media addiction in university students

Study Aim

To test a hypothesized causal model of factors influencing social media addiction in Thai university students

Methods

Study Design: A cross-sectional study was used. We used the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) cross-sectional guidelines to report this study here.

Sample and Setting: Sample size was based on structural equation of model testing. A minimum sample size to yield trustworthy results was 500 for a model that has many constructs, some with lower communalities and/or having fewer than three measurable items.[27] Therefore, the sample size was 500 with 10% added to compensate for incomplete data,[28] resulting in a required sample of 550 for this study. The multi-stage random sampling method was employed to identify potential participants. In the first step, a public university in Thailand was randomly selected using a simple random sampling technique. In the second step, using stratified random sampling, the faculties of the selected public university were divided into three groups: health sciences, sciences and technology, and human and social sciences. Then, five faculties were selected using simple random sampling with replacement, including two from health sciences, one from sciences and technology, and two

from human and social sciences based on the proportion of faculties in each group. Finally, the estimation of the subject number was performed using a ratio of actual total number of students in each faculty based on the database of undergraduate students in 2020. The target students were invited to participant on this study via posters. The primary investigator (PI) met voluntary students in each faculty and informed them about the research details. Eligible participants who met inclusion criteria from each faculty were recruited based on the proportion of undergraduate students in each faculty until reaching the required number of 550 undergraduate students (**Figure 2**). The inclusion criteria were: 1) between 18 and 25 years old, and 2) studying in a public university. The exclusion criteria included: 1) having a history of mental illness, or 2) having treatment for mental illness.

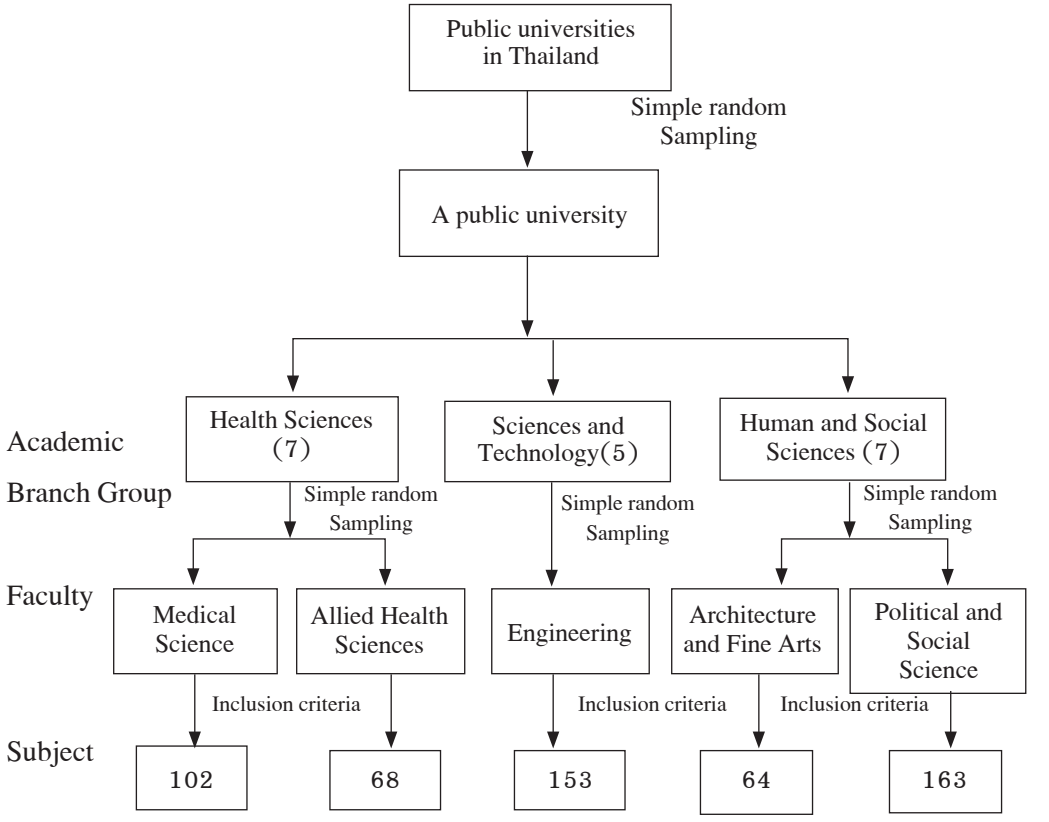


Figure 2. Sampling method of the study

Ethical Considerations: This study was approved by the Research Ethics Committee of the Faculty of Nursing, Chiang Mai University (code 2562-Full 043) and the target public university (2/192/62). The undergraduate students were invited to participate and received detailed explanations of all research aspects. Participants were ensured the right to refuse or withdraw from the study at any time. Confidentiality and anonymity were maintained throughout the research process.

Instruments: Ten instruments were used, five of which were translated with permission into Thai: the Bergen Social Media Addiction Scale, Internet Self-efficacy Scale, Internet Use Expectancies Scale, Self-Regulation Scale, and Subjective Norm Scale.

The process of back-translation of these instruments was based on Brislin's translation model.[29] The five translated instruments were evaluated for content validity by six experts in psychiatry and technology. Confirmatory factor analysis (CFA) was employed to test construct validity of all instruments, except the demographic data form. The results showed that most fit indices were acceptable. The reliability of the instruments, except for the demographic data form, was also evaluated in a pilot study with 10 participants meeting the same criteria as the study sample but not included in the main study, and with a study sample of 550 participants. Results of the content validity index (CVI), reliability of pilot study and main study, and examples of items are presented in **Table 1.**

Table 1. Content validity index, Cronbach's alpha reliability and examples of items of instruments

Instruments	Content validity index		Cronbach's alpha		Example of item
	I-CVI	S-CVI/Ave	Pilot study	Main study	
BSMAS	1.00	1.00	0.81	0.85	How often during the last year have you spent a lot of time thinking about social media or planned use of social media?
ISS	0.83-1.00	0.94	0.93	0.92	I can use blogging as an effective way of connecting with others.
IUES	0.83-1.00	0.96	0.83	0.88	I use the Internet because it makes possible / facilitates to experience pleasure.
Self-regulation Scale	0.83-1.00	0.92	0.82	0.89	I can concentrate on one activity for a long time, if necessary.
CES-D	N/A	N/A	0.85	0.94	During the past week... I was bothered by things that usually don't bother me.
Neuroticism Subscale of the NEO-FFI	N/A	N/A	0.92	0.90	I am a nervous person.
Extraversion Subscale of the NEO-FFI	N/A	N/A	0.88	0.92	I easily become close to other people.
MDSPSS	N/A	N/A	0.89	0.91	There is a special person who is around when I am in need.
Subjective Norm Scale	0.83-1.00	0.93	0.93	0.89	Most people who are important to me check social media regularly.

Note. BSMAS = Bergen Social Media Addiction Scale, ISS = Internet Self-efficacy Scale, IUES = Internet Use Expectancies Scale, CES-D = Center for Epidemiologic Studies-Depression Scale, NEO-FFI = NEO Five-Factor Inventory (NEO-FFI), MDSPSS = Multi-Dimensional Scale of Perceived Social Support, N/A = not applicable because this instrument was not calculated

A demographic data form was developed by the PI to collect demographic characteristics from the sample which included closed-ended questions about gender, age, status, education, faculty, hours spent on social media per day, devices for accessing social media, type of social media used, and purpose of social media use.

The Bergen Social Media Addiction Scale (BSMAS) developed by Andreassen et al.[30] was used to assess social media addiction behavior. The BSMAS was developed based on a biopsychosocial perspective and behavioral characteristics of engagement in online social media.[6] The BSMAS contains six items in six subscales of addictive behaviors: salience, conflict, mood modification, withdrawal, tolerance, and relapse. Each item is rated on a 5-point rating scale from 1 (very rarely) to 5 (very often). Total possible scores

range from 6 to 30 with higher scores indicating greater social media addiction behavior.

The Internet Self-efficacy Scale (ISS) was developed by Kim and Glassman[15] to assess perceived self-efficacy about belief of individuals' own abilities for organizing and applying a variety of tasks on Internet associated with social media for producing overall achievements. The ISS comprises 17 items regarding confidence to perform five major dimensions of Internet: reaction/generation, differentiation, organization, communication, and search.[15] Items are rated using a 7-point rating scale from 1 (not at all confident) to 7 (very confident). Total scores range from 17 to 119 with higher scores indicating better Internet self-efficacy.

The Internet Use Expectancies Scale (IUES) was developed by Brand et al. [16] and used to assess Internet use expectancies about consequences of using social media. The IUES has eight items in two subscales: positive reinforcement and avoidance reinforcement.[16] Each item is rated on a 6-point rating scale from 1 (completely disagree) to 6 (completely agree). Scores range between 8 and 48 with a higher score indicating higher social media use expectancies.

The Self-regulation Scale was developed by Schwarzer et al.[31] to assess self-regulation as individuals' ability to control own thought, affect, and performance against their demands and external reinforcement when they interact with the situations or environment. This scale comprises 10 items in two subscales: attention-regulation and emotion-regulation.[31] Each item is rated using a 4-point rating scale from 1 (not at all true) to 4 (exactly true). Three items are reverse scored (Items 5, 7, 9). Total possible scores range from 10 to 40 with higher scores presenting better self-regulation.

The Center for Epidemiologic Studies Depression Scale (CES-D) developed by Radloff[18] was translated into Thai by Trangkasombat et al.[32] and was used to evaluate the presence of depressive symptoms that reflected affective, behavioral, somatic, and interpersonal changes. The CES-D has 20 items in four subscales: depressed affect, positive affect, somatic and retarded activity, and interpersonal relationships in the past week.[18] It has a 4-point Likert scale ranging between 0 (rarely or none of the time) and 3 (most or all of the time). There are four reverse-scored items. Total possible scores range from 0 to 60, with a higher score indicating higher depressive symptoms.

The Neuroticism Sub-scale of the NEO Five-Factor Inventory (NEO-FFI) developed in Thai by Sangjeen,[33] based on the Revised NEO Personality Inventory (NEO PI-R) and the five-factor model of personality,[21] was employed to assess neuroticism personality as patterns of characteristic that presented anxiety, anger, hostility, depression, impulsiveness, vulnerability, sensitivity, unreasonableness, inconstancy, and fluctuation neuroticism personality. The neuroticism subscale of the NEO-FFI comprises 10 items. It is a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Three items are reverse-scored. The sub-scale yields a total possible score ranging from 10 to 50, with a higher score reflecting higher neuroticism.

The Extraversion Sub-scale of the NEO Five-Factor Inventory (NEO-FFI) developed in Thai by Sangjeen,[33] also based on the Revised NEO PI-R and the five-factor model of personality,[21] was used to assess extraversion personality as patterns of characteristic that involved expansiveness, sociability, activeness, assertiveness, enthusiast, and talkativeness. The extraversion subscale of the NEO-FFI has 10 items in three dimensions: warmth, gregariousness, and positive emotions.[33] It is a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Five items are reverse-scored. The sub-scale yields a total possible score ranging from 10 to 50, with higher scores indicating higher extraversion.

The Multi-Dimensional Scale of Perceived Social Support (MDSPSS) developed by Zimet et al.,[24] translated into Thai by Wongpakaran and Wongpakaran,[34] was used to measure perceived social support as individuals' perception considering emotional support from family, friends, and significant others. The MDSPS has 12 items in three subscales from three particular sources:

family, friends, and significant others.[24] Each item is rated on a 7-point Likert scale from 1 (very strongly disagree) to 7 (very strongly agree). Total scores range from 12 to 84, with a higher score showing higher perceived social support.

The Subjective Norm Scale developed by Ho et al.[26] was used to evaluate subjective norms as individuals' perceptions regarding whether their significant others wished them to perform a social media behavior or not, and whether they desired to follow those wishes. This scale contains 5 items in two subscales: normative belief and motivation to comply.[26] It uses a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Total possible scores range from 5 to 35, with higher scores indicating greater subjective norm.

Data Collection: This was conducted between January and March 2020. The PI screened for potential students based on the inclusion criteria and informed the students about the research details. If the students showed interest, they were asked for their willingness to participate in this study and signed consent forms. Data were collected in a pre-arranged activity room in each of the five selected faculties. Each participant completed self-report questionnaires face-to-face in two sessions; 5 questionnaires for each session. After data collection, the PI requested the participants to recheck the completeness of the instruments based on their willingness. While the participants were completing the questionnaires, the PI was outside the room to prevent pressure and discomfort, and ensure freedom in completing the questionnaires. Then, the participants put all the questionnaires in the given opaque envelope, sealed it by themselves, and put in the opaque plastic box for confidentiality of the participants.

Data Analysis: The Statistic Package for the Social Science (SPSS 26.0) was applied to analyze descriptive statistics for demographic characteristics and test assumptions (missing data, outliers, normality, linearity, and multicollinearity) before running the Structural Equation Model (SEM).[27,28] From the analysis, the results revealed no missing data, but seven subjects were identified as outliers and were eliminated from further analysis. For testing normality, there was non-normal distribution so the bootstrap method was used for analyzing variables.[28] There was no violation of the linearity assumption, and no multicollinearity issues were found in the study variables. For SEM, the maximum likelihood estimation method was utilized and evaluated based on goodness-of-fit indices as follows: chi-square (χ^2), a relative chi-square (χ^2/df), Goodness of Fit Index (GFI), Root Square Error of Approximation (RMSEA), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), and Tucker Lewis Index (TLI).[27,28] It should be noted that the chi-square test had some limitations; therefore, a relative chi-square (χ^2/df) was used instead of a non-significant chi-square.[27,28]

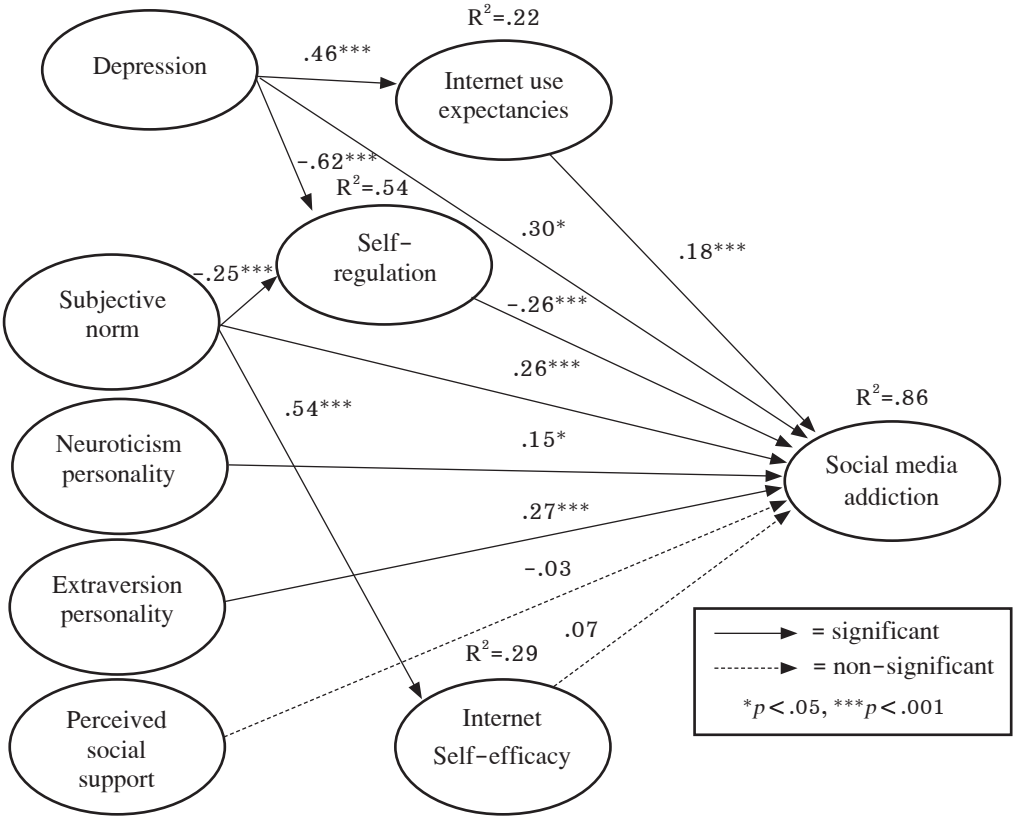
Results

Demographic characteristics

Five hundred fifty university students volunteered to participate in this study and completed all questionnaires. Seven participants were identified as statistical outliers and therefore were deleted from further analysis, resulting in a total of 543 participants for data analysis. Over half of the participants were female (58.01%) aged between 18 and 25 years (M = 20.23, SD = 1.16). The participants were in the second (30.94%) and third years (30.75%) of undergraduate study and were studying political or social science (28.73%). The largest proportion of hours spent on social media per day was over three hours (45.12%). The participants ranked mobile phones /smartphones (28.29%) as the most frequently used device for accessing social media, YouTube (63.53%) as the main type of social media use, and entertainment (65.56%) as the most important purpose of social media use.

Results of model testing

The hypothesized model of social media addiction is presented in **Figure 1**, and the results of the model testing are exhibited in **Figure 3**. Since the goodness-of-fit of the initial model was rejected, model modification was performed. The modified model fitted with the empirical data (see **Table 2**).



$\chi^2/df = 1.974$, CFI = .950, TLI = .938, GFI = .928, AGFI = .904, RMSEA = .042

Figure 3. The final model of social media addiction in university students

Table 2. Comparison of the goodness-of-fit indices in the hypothesized model and the modified model of the social media addiction in university students

Goodness-of-Fit Indices	Standard of Fit	Hypothesized Model	Modified Model
Chi-Squared test (χ^2)	Low χ^2 ($p > 0.05$)	1,582.616 ($p < 0.001$)	645.554 ($p < 0.001$)
Degree of freedom (df)		365	327
Relative Chi-square (χ^2/df)	< 3	4.336	1.974
Goodness of Fit Index (GFI)	> 0.90	0.828	0.928
Root Square Error of Approximation (RMSEA)	< 0.05-0.08	0.078	0.042
Comparative Fit Index (CFI)	≥ 0.95	0.808	0.950
Tucker Lewis Index (TLI)	> 0.92-0.95	0.786	0.938
Adjusted Goodness of Fit Index (AGFI)	> 0.90	0.795	0.904

Regarding relationships between each latent variable and social media addiction, depression had the strongest direct and total effect on social media addiction. Depression affected social media addiction directly and indirectly via Internet use expectancies and self-regulation. Subjective norm affected social media addiction directly and indirectly via self-regulation. Extraversion personality, Internet use expectancies, neuroticism personality, and self-regulation directly affected social media addiction. In contrast to the hypothesized model, Internet self-efficacy and perceived social support had no direct or indirect effect on social media addiction. Importantly, these findings indicated the significant role of two variables, Internet use expectancies and self-regulation, in mediating effects of depression and subjective norm on social media addiction.

The model of social media addiction in university students received the highest total effect from depression, followed by subjective norm, extraversion personality, self-regulation, Internet use expectancies, and neuroticism personality. Among these variables, depression had the strongest direct effect on social media addiction, followed by extraversion personality, subjective norm, self-regulation, Internet use expectancies, and neuroticism personality. The direct, indirect, and total effects between latent variables are shown in **Table 3**. The model explained 86% of the variance in social media addiction.

Table 3. The direct effect (DE), the indirect effect (IE), the total effect (TE), and the multi-relative co-efficient (R^2) of the social media addiction in university students

Endogenous Variables	R^2	Influencing Variables	TE	DE	IE
Social media addiction	0.86	Depression	0.55***	0.30*	0.25***
		Subjective norm	0.28***	0.26***	0.02***
		Extraversion personality	0.27***	0.27***	-
		Self-regulation	-0.26***	-0.26***	-
		Internet use expectancies	0.18***	0.18***	-
		Neuroticism personality	0.15*	0.15*	-
Internet use expectancies	0.22	Depression	0.46***	-	0.46***
Self-regulation	0.54	Depression	-0.62***	-	-0.62***
		Subjective norm	-0.25***	-	-0.25***

*p < .05 ** p < .01 ***p < .001

Discussion

The percentage of explained variance in social media addiction in this study was greater than other studies.[17,35] One possible explanation is that this study was based on the SCT[12] as well as relevant literature, which included both personal and environmental factors obtained from a comprehensive review of social media addiction. These factors together can exert powerful effects on behavior of social media addiction. Moreover, data collection was performed between January and March 2020, which was the beginning of the COVID-19 pandemic worldwide. Therefore, more students might have spent more time navigating social media during this pandemic. This unique situation might have increased the potential risk or bias of variables in this study. The findings demonstrated that 86% of total variance in social media addiction could be explained by six significant predictors: depression, subjective norm, extraversion personality, self-regulation, Internet use expectancies, and neuroticism personality.

Depression was the strongest predictor and had a positive direct effect on social media addiction. Congruent with previous research, depressed adolescents

with impaired cognitive function and inadequate social skills might strive for increased social media to enhance or modify their mood and elevate their self-esteem.[19,35] All of these limitations are believed to contribute to social media addiction. The findings supported the hypothesis based on the SCT that one's behavior and personal factors have reciprocal causation.[12] Moreover, all of the study participants were undergraduate students who had to face an array of changes in academic, social, economic, and environmental aspects of their lives, which could increase depression, thereby increasing social media addiction behavior. Additionally, depression indirectly affected social media addiction via self-regulation and Internet use expectancies. In the SCT, depression has a crucial part in decreasing self-regulation and increasing outcome expectancies.[12] Individuals with high outcome expectancies are more likely to perform social media use behavior and thus develop addictive behavior tendencies. This was consistent with a previous study.[14]

Subjective norm was the second strongest predictor with a positive direct effect on social media addiction. This finding was in line with the theoretical framework suggesting that subjective norm, as a social influence, affects social media addiction behavior.[12] The study participants were surrounded by social media users and their daily lives also required social media use both for their studies and social interaction with others. Therefore, they were likely facing intense social influence by significant others who might induce them to engage in social media use, resulting in increased social media addiction. Consistent with previous studies, subjective norm had a positive direct effect on social media addiction.[26,36] In addition, subjective norm had a negative indirect effect on social media addiction via self-regulation. This finding confirmed the notion of the SCT[12] that subjective norm was the individual's environment that could influence self-regulation processes, especially in adolescence with low self-regulation.[5] This could lead to a greater likelihood of exhibiting relevant behavior for social media addiction.

Extraversion personality had a significant positive direct effect on social media addiction behavior. This confirmed the notion of the SCT[12] that personal factors, specifically personality traits, could affect the behavior of social media addiction. Adolescents with extraversion personality were likely to engage in interaction with others and group activities. The study participants were undergraduate students who engaged in multiple activities both inside and outside the classroom. Their socially oriented characters promoted the extensive use of social media to access and engage quickly with a large number of people. Moreover, they were 18-25 years old that might stimulate them to further explore the world using social media, thus, exhibiting social media addiction behavior. These findings were in line with a prior study.[22]

Self-regulation had a negative direct effect on social media addiction. From the SCT perspective, this finding endorsed the notion that individuals can control their behavior via self-regulation.[20] Thereby, deficient self-regulation can induce the development of addictive behaviors. University students may have limited self-regulation for resisting internal and external situational desires to use social media.[5] Moreover, 92.82% of the participants could access social media via smartphone conveniently and easily, which might affect their self-regulation. Greater engagement in social media can lead to a greater level of social media addiction behavior. Literature reviews also showed similar findings.[17]

Internet use expectancies had a positive direct effect on social media addiction. Consistently, the SCT proposes that individuals with high positive outcome expectancies are likely to actually perform behaviors because outcome expectancies stimulate the decision-making for performing behaviors.[12] University students might view or evaluate social media use on the Internet as positive outcome expectancies to avoid other duties or to experience positive emotions, thus, resulting in the development of social media addiction. In addition, 65.6% of the study participants used social media for

entertainment. This reflected the expectancies of using social media as avoidance of conflict and negative feelings, or compensation for real-life interaction deficits. These findings were in agreement with other findings.[14,16]

Neuroticism personality had a positive direct effect on social media addiction. This was consistent with the SCT[12] that neuroticism personality, as a personal factor reflecting psychological distress and vulnerability,[21] causes individuals to have ineffective interaction with others and reinforces pre-occupied social media use. Moreover, the study participants were 18-25 years old, which is considered the age of transition in the developmental stage of "identity vs. role confusion" to "intimacy vs. isolation."[37] Therefore, they used social media to learn and guide themselves. This may further contribute a higher level of social media addiction. These findings were consistent with previous studies.[23,26]

Surprisingly, Internet self-efficacy did not have a significant effect on social media addiction. This finding was incongruent with the SCT, which proposes that self-efficacy has a vital part in carrying out behaviors.[12] One explanation is that social media platforms are designed to be user-friendly. Therefore, university students did not perceive any need to utilize their Internet skills or social media abilities. Instead, they might use their Internet skills and capabilities to perform other activities on the Internet. Moreover, prior Internet experiences, including cyberbullying, online stalking, and online harassment, might stimulate their intention to discontinue using social media.[38] Additionally, the finding might be due to the limitation of the Internet Self-efficacy Scale that contains only two items to measure self-efficacy in using social media while, in fact, the instrument to measure self-efficacy should be specific to social media addiction only.

Finally, there were no significant effects of perceived social support on social media addiction behavior. This finding could be explained that perceived social support was a personal factor of university students and may vary depending on several factors that were not investigated in this study such as gender and stress.[39] In particular, the COVID-19 pandemic might have influenced how university students perceived their social support. Some participants may have perceived support both in online and off-line worlds. With a lack of clarity, it might be difficult to identify probable different effects of online versus off-line social support on social media addiction.

Limitations

This study had some limitations. The interpretation of causal relationships in studied variables was limited due to the cross-sectional study. Moreover, data were collected from students in a public university in Thailand. Therefore, generalization of findings to students in private university or vocational college, or even other countries should be performed with caution. Lastly, data collection was performed during the COVID-19 pandemic. Thus, university students had to study online and maintain strict social distancing. This situation might have influenced the variables in this study, which could affect the finding of this research.

Conclusions and Implications for Nursing Practice

The findings of this study provide empirical evidence to understand factors affecting social media addiction in university students in Thailand, which revealed that personal factors (depression, self-regulation, Internet use expectancies, extraversion personality, and neuroticism personality) and an environment factor (subjective norm) had direct effects on social media addiction behavior. Additionally, depression and subjective norm also had indirect effects on social media addiction mediated by Internet use expectancies and self-regulation. The findings of this study provide crucial information and guidance for nursing practice to design prevention or reduction programs for social media addiction in university students that fit with the context of Thai university students. Therefore, nurses should develop

effective prevention programs to minimize risks for social media addiction by decreasing depression, changing subjective norm, improving how to self-regulate, and reducing Internet use expectancies in social media use. Moreover, the findings illustrated that neuroticism personality and extraversion personality had direct effects on social media addiction behavior. Thus, nurses should screen for university students with neuroticism personality and extraversion personality because early detection and modification of these personality traits could contribute to a reduction in behaviors of social media addiction.

Additionally, university leadership can use the findings of this study to develop an extra curriculum for reducing the dangers of social media addiction and enhancing the awareness of social media use among university students. For students who are addicted to social media, nurses can get involved in the extra curriculum by screening and referring them to specialized hospitals for further treatment.

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โมเดลปัจจัยที่มีอิทธิพลต่อการติดสื่อสังคมออนไลน์ของนักศึกษามหาวิทยาลัย

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บทคัดย่อ: การติดสื่อสังคมออนไลน์กลายเป็นปัญหาทางด้านสุขภาพจิตที่สำคัญและพบความชุกเพิ่มขึ้นอย่างต่อเนื่องในเยาวชนร่วมกับปัญหาทางด้านร่างกาย จิตใจ และการเรียน เพื่อที่จะลดการติดสื่อสังคมออนไลน์จำเป็นต้องมีความเข้าใจเกี่ยวกับปัจจัยที่มีอิทธิพลต่อการติดสื่อสังคมออนไลน์ การศึกษาภาคตัดขวางครั้งนี้มีวัตถุประสงค์เพื่อพัฒนาและทดสอบโมเดลของปัจจัยที่มีอิทธิพลต่อการติดสื่อสังคมออนไลน์ในนักศึกษามหาวิทยาลัย กลุ่มตัวอย่างถูกคัดเลือกโดยวิธีการสุ่มแบบหลายขั้นตอน คือ นักศึกษาปริญญาตรีจำนวน 550 คน จาก 5 คณะในมหาวิทยาลัยของรัฐแห่งหนึ่งของประเทศไทย เก็บข้อมูลโดยใช้แบบสอบถามข้อมูลส่วนบุคคล แบบสอบถามการติดสื่อสังคมออนไลน์เบอเกน แบบสอบถามการรับรู้สมรรถนะแห่งตนด้านอินเทอร์เน็ต แบบสอบถามการคาดหวังในการใช้อินเทอร์เน็ต แบบสอบถามการกำกับตนเอง แบบประเมินภาวะซึมเศร้า แบบสอบถามบุคลิกภาพแบบไม่มั่นคงทางอารมณ์และแบบสอบถามบุคลิกภาพแบบแสดงตัวในมาตรวัดบุคลิกภาพห้าองค์ประกอบ แบบสอบถามความรู้สึกหลากหลายมิติเกี่ยวกับความช่วยเหลือทางสังคม และแบบสอบถามการคล้อยตามกลุ่มอ้างอิง ทำการทดสอบโมเดลโดยใช้โปรแกรม SPSS และ AMOS 26.0

ผลการวิจัยพบว่าโมเดลที่สร้างขึ้นมีความสอดคล้องกับข้อมูลเชิงประจักษ์และสามารถอธิบายความผันแปรของการติดสื่อสังคมออนไลน์ได้ร้อยละ 86 โดยภาวะซึมเศร้าเป็นปัจจัยสำคัญที่สุดที่มีอิทธิพลต่อการติดสื่อสังคมออนไลน์ทั้งทางตรงและทางอ้อมผ่านการคาดหวังในการใช้อินเทอร์เน็ตและการกำกับตนเอง การคล้อยตามกลุ่มอ้างอิงมีอิทธิพลทางตรงและทางอ้อมต่อการติดสื่อสังคมออนไลน์ผ่านการกำกับตนเอง บุคลิกภาพแบบแสดงตัวและบุคลิกภาพแบบไม่มั่นคงทางอารมณ์มีอิทธิพลทางตรงต่อการติดสื่อสังคมออนไลน์ ในขณะที่การรับรู้สมรรถนะแห่งตนด้านอินเทอร์เน็ตและการรับรู้การสนับสนุนทางสังคมไม่มีทั้งอิทธิพลทางตรงและทางอ้อมต่อการติดสื่อสังคมออนไลน์ สรุปได้ว่า ปัจจัยส่วนบุคคลและสิ่งแวดล้อมร่วมกันส่งผลอย่างมากต่อการติดสื่อสังคมออนไลน์ ดังนั้นพยาบาลและบุคลากรด้านสุขภาพสามารถออกแบบและทดสอบประสิทธิภาพของโปรแกรมเพื่อลดการติดสื่อสังคมออนไลน์โดยการลดภาวะซึมเศร้าและปรับเปลี่ยนการคล้อยตามกลุ่มอ้างอิงเพื่อนำไปสู่การกำกับตนเองที่ดีขึ้นและลดการคาดหวังในการใช้อินเทอร์เน็ต รวมทั้งคัดกรองและปรับเปลี่ยนบุคลิกภาพแบบไม่มั่นคงทางอารมณ์และแบบแสดงตัว

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คำสำคัญ: พฤติกรรมการเสพติด ภาวะซึมเศร้า บุคลิกภาพแบบแสดงตัว บุคลิกภาพแบบไม่มั่นคงทางอารมณ์ การกำกับตนเอง การติดสื่อสังคมออนไลน์ การคล้อยตามกลุ่มอ้างอิง นักศึกษามหาวิทยาลัย

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