

ORIGINAL ARTICLE

A CROSS-SECTIONAL STUDY ON SOCIAL MEDIA ADDICTION AND ITS RELATIONSHIP WITH STRESS AND LONELINESS

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ABSTRACT

Over the previous few years, the allure of social media has surged, captivating an incredible number of people worldwide. People interact with each other not only face-to-face but also through social media platforms such as Facebook, Instagram, Tiktok and Twitter. Misuse or overuse of these platforms might have led to addiction especially in the younger generation. Social media addiction has emerged as a problem of global concern and researchers all around the world have been trying to find its relation with other possible consequences. This study aims to determine the prevalence of social media addiction, stress and loneliness among university students in Selangor. Additionally, we aim to study the association between sociodemographic factors, stress, loneliness and social media addiction. The study utilized a cross sectional research design and employed a convenience sampling method with a sample of 350 university students who are Malaysian, 18 years old and above as well as currently studying in universities around Selangor. Data collection was carried out through an online validated questionnaire which includes Personal Identification and Sociodemographic, Social Media Disorder Scale (SMD Scale), Perceived Stress Scale (PSS-10) and De Jong Gierveld Loneliness Scale. Results showed that 73.71% of students in Selangor had a prevalence of social media addiction and most were having moderate stress (82.4%) and feeling moderately lonely (73.4%). A significant association was found for social media addiction and stress but not with loneliness. Thus, by identifying the factors associated with social media addiction and its detrimental effects through this study, we aim to encourage development of targeted interventions and support mechanisms to alleviate its adverse effects.

Keyword: Social media addiction, stress, loneliness, university, Selangor.

INTRODUCTION

Over the previous few years, the allure of social media has surged, captivating an incredible number of people worldwide. While most people maintain a healthy balance in their social media usage, a fraction of users have become obsessed, using them in an excessive or compulsive manner¹ with at least 3.5 billion individuals being active online users among the global population of 7.7 billion². According to a study published by Statista Research Department in the year 2022, the number of smartphone users in Malaysia was estimated to reach about 29 million and is expected to increase by another 1.74 million in the next four years³. The study also revealed an average of 7.5 hours and 2.45 hours were spent on the internet and social media sites respectively by Malaysians on a daily basis. These data serve as evidence that these platforms hold a significant role in modern society.

In order to keep users continuously engaged, social media sites have adopted strategies similar to those employed by gambling and recreational drugs which is by stimulating the brain's reward system through dopamine release. This neuroscientific perspective sheds light on the captivating nature of social media addiction¹. As

users scroll through their feeds, anticipating likes, comments and shares by their followers, the brain experiences a surge of dopamine, causing a fostering cycle of addiction. Just like for any other addictions, the impact of social media addiction on individuals and the society cannot be overlooked as it can lead to detrimental effects on the brain. Many users find themselves unwittingly addicted, compulsively scrolling through articles, photographs and videos to the point where it dominates their daily life. The need to stay connected may even lead to sleep disturbances, reduced productivity, strained relationships and even a decline in mental health. Besides that, the constant exposure to social media coupled with the desire for validation and fear of missing out (FOMO) creates a fertile ground for the development of addictive behaviours. According to some researchers, the fear of missing out are associated with negative moods, depression as well as limited satisfaction with life⁴.

As defined by the World Health Organization, mental health is a state of mental well-being that enables people to cope with the stresses in their life. Mental health is a crucial part of health and well-being and it is more than just the absence of mental disorder⁵. Studies have consistently

demonstrated that, among various age groups, social media addiction is more common among university and college students, leading to significant adverse effects on their mental well-being⁶. For instance, Zadra's study on adults revealed a correlation between excessive social media and internet use with various mental health issues such as stress, sleep disturbances and personality disorders⁷. Furthermore, Richards et al. too had highlighted the negative impact of the Internet and social media on the health and quality of life of adolescents⁸. Hence, this online study seeks to gauge the prevalence of social media addiction among university students in Selangor while exploring its correlation with various sociodemographic factors, stress levels and feelings of loneliness. By conducting this research, we hope to raise awareness about social media addiction and its detrimental effects, provide assistance to those affected and prevent potential new cases from emerging.

METHODOLOGY

The study utilized a cross sectional research design and employed a convenience sampling method. Data collection was carried out through an online validated questionnaire adopted by a few studies of the same research field. The four sections of the questionnaire were of personnel identification and demographics ; Social Media Disorder Scale with Cronbach alpha of 0.7539; Perceived Stress Scale, PSS-10 with Cronbach's alpha of 0.74310 ; and De Jong Gierveld Loneliness Scale with Cronbach's alpha of 0.62110. The inclusion criteria includes Malaysian university students of age 18 and above and currently studying in universities around Selangor. Exclusion criteria in this study includes international students, student age more than 40 years old and part-time students.

This study was approved by University of Cyberjaya ethics committee and all the recommendations by the ethical body were followed. All the respondents had been explained regarding the study being conducted and about the confidentiality of their participation. A consent form was also given to all respondents. The Jeffrey's Amazing Statistics Program (JASP) was selected as the application of choice for this study. The statistical tests used were descriptive analysis, Chi-square test and logistic regression. Descriptive test was used to determine the frequency and distribution of the sociodemographic factors, while Chi-square was

used to identify the associations between categorical data. Logistic regression was applied to measure the association between sociodemographic factors, stress and loneliness with social media addiction.

RESULTS

A total of 350 university students in Selangor responded to the online survey. Table 1 displays the result of the sociodemographic characteristics of the respondents. The majority of the students who participated in the study were distributed between the age of 18 to 29 (98.0%). Among the participants, 66.0% were females, 62.6% were of Malay ethnicity and 66.9% were pursuing their bachelor's degree. In addition, a vast majority, 96.3% had never been married and 26.9% has a family income of the T1 group.

Based on the data in Table 2 , our study found that the prevalence of social media addiction among university students in Selangor is 73.71%. Among these students, a majority exhibited moderate levels of stress (82.3%) and moderate levels of loneliness (73.4%).

According to Table 3, ethnicity emerged as the noteworthy sociodemographic factor linked to social media addiction. Interestingly, there was a similar prevalence of social media addiction among the three main ethnicities ; Malay, Chinese and Indian university students, at 75.3%, 73.3%, and 78.9%, respectively ($p=0.032$). However, this study did not find any significant association between social media addiction with age, gender, education level, and marital status. It was intriguing to see that university students with low stress were shown to have the highest prevalence of social media addiction at 92.3% compared with those with moderate stress and high perceived stress ($p=0.004$). Surprisingly, no significant association was found between loneliness and social media addiction in Selangor university students in our study.

A multiple logistic regression model in Table 4 included ethnicity and stress as independent variables and social media addiction as dependent variables. The model correctly classified 75.3% of the cases and showed a statistically significant $\chi^2(344) = 17.656$, $p=0.003$. Social media addiction was significantly predicted by ethnicity (Malay vs other: $OR=3.35$, $p=0.017$, and Chinese vs other; $OR=4.00$, $p=0.027$), and stress (high perceived stress vs low stress; $OR=0.12$, $p=0.008$).

Table 1: Sociodemographic characteristics among university students in Selangor

Sociodemographic factors	Frequency (N)	Percentage (%)
Age:		
18-29	343	98.0
30-39	7	2.0
Gender:		
Male	119	34.0
Female	231	66.0
Ethnicity:		
Malay	219	62.6
Chinese	38	10.9
Indian	75	21.4
Other	18	5.1
Education level:		
Certificate/Diploma education	87	24.9
Bachelor's degree	234	66.9
Postgraduate	29	9.4
Marital status:		
Never married	337	96.3
Married	13	3.7
Household family income level:		
B1< RM 3,171	70	20.0
B2 RM 3,171-RM 4,850	47	13.4
M1 RM 4,850- RM 7,100	69	19.7
M2 RM 7,101- RM 10,970	70	20.0
T1> RM 10,970	94	26.9

Table 2: Prevalence of social media addiction, stress, and loneliness among university students in Selangor.

Variables	Frequency (N)	Percentage (%)
Social media addiction:		
Yes	258	73.7
No	92	26.3
Stress:		
Low Stress	26	7.4
Moderate Stress	288	82.3
High Perceived Stress	36	10.3
Loneliness:		
Not lonely	92	26.3
Moderately lonely	257	73.4
Severely lonely	0	0
Very severely lonely	1	0.3

DISCUSSION

Our study has uncovered that 73.71% of university students around Selangor suffer from social media addiction. Notably, our results on the prevalence of social media addiction were higher than a similar study conducted by Youssef et al. (2020) which was done among Lebanese adults and found a prevalence of 23.7% out of 456 participants¹⁰. The difference could be attributed to the fact that our study focused exclusively on university students while Youssef's study included

respondents from various educational backgrounds. Interestingly, our results closely align with a study conducted in Cambodia which found that the social media addiction prevalence among university students to be at 91.5% by Kreya & Wok (2020)¹¹. Thus it is important to note that limiting the study to a certain group of respondents may contribute to a different rate of prevalence as studies that limit the participants to only university students have a higher rate of prevalence compared to studies that cover a broader range of educational level.

Table 3: The association between sociodemographic factors, stress, and loneliness with social media addiction among university students in Selangor.

Variables	Social media addiction			x ² (df)	p value
	Yes N (%)	No N (%)	Total N (%)		
Age:					
18-29	254 (74.1)	89 (25.9)	343 (100)	1.012 (1)	0.314
30-39	4 (57.1)	3 (42.9)	7 (100)		
Gender:					
Male	87 (73.1)	32 (26.9)	119 (100)	0.034 (1)	0.854
Female	171 (74.0)	60 (26.0)	231 (100)		
Ethnicity:					
Malay	165 (75.3)	54 (24.7)	219 (100)	8.801 (3)	0.032
Chinese	55 (73.3)	20 (26.7)	75 (100)		
Indian	30 (78.9)	8 (21.1)	38 (100)		
Other	8 (44.4)	10 (55.6)	18 (100)		
Education level:					
Certificate/Diploma	56 (64.4)	31 (35.6)	87 (100)	5.325 (2)	0.070
education	179 (76.5)	55 (23.5)	234 (100)		
Bachelor's degree	23 (79.3)	6 (20.7)	29 (100)		
Postgraduate					
Marital status:					
Never married	250 (74.2)	87 (25.8)	337 (100)	1.033 (1)	0.309
Married	8 (61.5)	5 (38.5)	13 (100)		
Household family income level:					
B1< RM 3,171	53 (75.7)	17 (24.3)	70 (100)	1.913 (4)	0.752
B2 RM 3,171-RM 4,850	32 (68.1)	15 (31.9)	47 (100)		
M1 RM 4,850- RM 7,100	50 (72.5)	19 (27.5)	69 (100)		
M2 RM 7,101- RM 10,970	50 (71.4)	20 (28.6)	70 (100)		
T1> RM 10,970	73 (77.7)	21 (22.3)	94 (100)		
Stress:					
Low Stress	24 (92.3)	2 (7.7)	26 (100)	10.817 (2)	0.004
Moderate Stress	214 (74.3)	74 (25.7)	288 (100)		
High Perceived Stress	20 (55.6)	16 (44.4)	36 (100)		
Loneliness:					
Not lonely	71 (77.2)	21 (22.8)	92 (100)	1.163 (3)	0.559
Moderately lonely	186 (72.4)	71 (27.6)	257 (100)		
Severely lonely	0 (0)	0 (0)	0 (0)		
Very severely lonely	1 (100)	0 (0)	1 (100)		

Abbreviations: N, frequency; %, percentage; df, degrees of freedom.

Besides that, in our study, a majority of students, 82.3%, experienced a moderate level of stress. Similar to a study by Sekoati et al. (2021), they found that 68% of their participants had a moderate level of stress based on the PSS-10 questionnaire¹². However, our result is significantly higher compared to a study conducted by Shamsuddin et al. (2013) which reported only 18.9% experiencing moderate stress¹³. Our study indicates that the prevalence of stress is around four times greater than that observed in their research. Additionally, when we compare the percentage of students with very high perceived stress in our study (10.3%) to a study conducted in southwestern Saudi Arabia by

Alsalem et al. (2021) which reported a prevalence of 12.7%, we find that both results appear to be quite similar¹⁴. Based on these results, we can see that a substantial number of students are facing significant levels of stress in their lives and it highlights the importance for higher educational institutions in Selangor to implement certain interventions aimed at reducing this issue. Such high levels of stress can adversely affect students in their academic performance and overall well being. A study in China by Liu Z et al. (2021) further supports this as it revealed a significant association between perceived stress and depression ($\beta=0.513$, $p < 0.001$)¹⁵.

Table 4: Multiple logistic regression model of possible factors predicting social media addiction among the university students in Selangor.

Variables	OR	Confidence interval for OR		p value
		Lower	Upper	
Ethnicity:				
Other	1.00 (ref)			
Malay	3.35	1.24	9.05	0.017
Chinese	4.00	1.17	13.71	0.027
Indian	2.83	0.96	8.34	0.059
Stress:				
Low Stress	1.00 (ref)			
Moderate Stress	0.25	0.06	1.10	0.067
High Perceived Stress	0.12	0.02	0.57	0.008

Abbreviations: OR, odd ratio; ref, reference category.

It has also been revealed that a significant proportion of the respondents experienced moderate levels of loneliness, accounting for 73.4%. In comparison, a study done in Germany by Diehl et al. (2018) reported that 32.4% of university students felt moderately lonely while 3.2% experienced severe loneliness¹⁶. According to Dagnew et al (2019) in their study in Ethiopia, the prevalence of loneliness among the students in University of Gondar is 49.5% (95% CI 44.6-54.4%)¹⁷. A cross sectional study in Bangladesh, which was using the University of California, Los Angeles (UCLA) loneliness scale, showed that the prevalence of loneliness among the university students was 43%¹⁸. Further studies of factors linked to loneliness prevalence should be done as it could facilitate authorities in devising strategies to reduce its occurrence.

Apart from that, our research showed that ethnicity was the sociodemographic factor significantly linked to social media addiction. However, when compared to a study conducted in Texas, there was no significant relationship found between race/ethnicity with social media addiction¹⁹. The difference in results could potentially be due to the variation of ethnicities examined in both studies. Our study mainly involved the main races in Malaysia which are Malay, Chinese and Indian while the other study was of totally different races ; Caucasians, African Americans, and Latinos.

Yet, in our study, social media addiction exhibited no significant associations with age, gender, education level or marital status, mirroring the findings of a study conducted in Management and Science University, Shah Alam which also found no significant link between social media addiction and these demographic factors²⁰. This suggests that students, irrespective of the mentioned sociodemographic factors, are equally susceptible to developing social media addiction. To promote awareness of their potential addiction, students are encouraged to utilize the Social-Media

Addiction Screening Scale (S-MASS), a validated and reliable screening tool for social media addiction, as indicated by research publish in the Siraj Medical Journal²¹ (Chanpen et al., 2020).

Subsequently, we observed a significant association between stress and social media addiction in university students around Selangor. Similarly, another study conducted among Taiwanese university students showed there is significant association between psychological distress and social media addiction²² (Huang, PC. et al,2023) . A study in China conducted by Zhao, N., & Zhou, G. (2021) also found a positive correlation between addictive social media use and stress²³. However, a notable difference emerged between our study and theirs. Our findings revealed that university students with low stress levels had the highest prevalence of social media addiction, whereas the Chinese study showed that individuals with higher stress levels were more susceptible to developing addictive social media habits. The reason for the dissimilarity remains unclear, as supporting evidence to explain this discrepancy is currently lacking. Less stressed people can opt for a good hobby instead of surfing their social media which could cause them from being addicted like hiking, cooking, journaling and coloring as shown in Alpaio, 2021²⁴.

On the other hand, our study did not find any significant association between social media addiction and loneliness. The findings align with a study similar to ours, where they also discovered no noteworthy correlation between Facebook and loneliness by Karakose et al. (2022)²⁵. However, these findings diverge from most of the similar studies. A study by Youssef et al. (2020) showed a significant association between social media use disorder with higher loneliness score¹⁰. Even a study by Bonsaksen et al. (2023) revealed that increased time spent on social media correlated with higher levels of loneliness, even when adjusting the factors that was being studied²⁶.

Besides that, a study by Bakry et al. (2022) also found a significant correlation between social media addiction and loneliness which confirmed the same results of a study by Khan et al. (2016)^{27,28}. The reason for this disparity remains unclear, as there is insufficient information available to support or explain this variation.

Nevertheless, two contradicting theories regarding social media use disorder and loneliness have arisen. One advocates that time spent online replaces the time spent offline, thus reducing the quality of friendships. With this being called the “displacement hypothesis”, it concludes that usage of social media can increase the feeling of loneliness²⁹(Kraut et al., 1998). In contrast, some studies showed the so-called “stimulation hypothesis” whereby spending more time online enhances the quality of friendships thus reducing loneliness³⁰ (Shaw et al., 2005). However, despite the difference between the findings, the fact that some studies showed a strong connection between social media addiction and loneliness should raise enough awareness that it is crucial to implement interventions aimed at reducing social media addiction among students as to prevent development of loneliness, vice versa. A study by Masi et al. (2011) suggests that programs designed to improve social skills, enhance social support, increase opportunities for social interaction and address deficits in social cognition have the potential to decrease loneliness³¹. Therefore, it is advisable for students who exhibit a significant feeling of loneliness to be encouraged to participate in such programs to alleviate the feelings of isolation and improve overall well-being.

Given the discussion above, it's evident that exploring the connection between social media addiction and its influence on users' mental health is crucial and impactful. Such insights would be highly beneficial as they can raise awareness within the community and enable the customization of targeted interventions to address the issue effectively. This aligns with research conducted by Zaw & Azenal (2021), which revealed that social media addiction had detrimental effects on the mental health of nursing students and recommended that relevant authorities take proactive measures to implement appropriate interventions to address this issue³².

Nevertheless, this paper has its own set of constraints. One limitation is the relatively small sample size, although considered sufficient. Therefore, it is suggested that other researchers increase the sample size to further investigate the broader impact of social media on a larger scale. Additionally, our study focuses solely on the young age group. Thus, it is crucial to take into account the effects of social media on older individuals and determine whether it poses any adverse consequences for them.

CONCLUSION

In conclusion, this study showed quite a percentage of university students who are experiencing social media addiction which is 73.71% with a majority exhibiting moderate levels of stress (82.3%) and moderate levels of loneliness (73.4%). A significant association found between social media addiction and stress in our study, however, no significant association was found with loneliness. The benefits of this study extend beyond mere academic exploration. By identifying the issues and factors associated with social media addiction, we aim to encourage development of targeted interventions and support mechanisms to alleviate its adverse effects. Understanding the interplay between various factors and addictive behaviors can help tailor educational campaigns and mental health outreach programs, thereby fostering a healthier relationship with technology and social media.

Since our study is of a cross-sectional, thus the findings do not allow for causal inference. Despite the significant association between variables, we cannot conclude a causation between them. Therefore, it is recommended for future research to study about the causation between the variables we have studied in this paper. Furthermore, we encourage researchers to explore further the disparities regarding the correlation between social media addiction and loneliness. Such inquiries would facilitate a more comprehensive comprehension of the underlying factors contributing to variations in findings across different studies. Moreover, investigating this phenomenon with a larger sample size and considering the impact of social media addiction on older age groups would constitute a promising avenue for future research.

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