Social Media Addiction: Prevalence and Association with Depression among 7th-12th Grade Students in Bangkok

การติดสื่อสังคมออนไลน์: ความชุกและความสัมพันธ์กับภาวะซึมเศร้าของนักเรียนชั้นมัธยมศึกษาในเขตกรุงเทพมหานคร

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ABSTRACT

The main objective of this cross-sectional survey is to investigate the prevalence of social media addiction and depression, and the association between social media addiction and depression among adolescents in Bangkok. The population included 500 of the 7th-12th grade students aged between 13 and 17 years. They were asked to complete the Social Media Addiction Test (S-MAT), the newly developed questionnaire to assess the extent of social media addiction, and the Children's Depression Inventory (CDI) – Thai version, the well-established screening questionnaire for depression in children and adolescents. The data analyses utilized in this study used Pearson's product-moment correlation coefficient. The prevalence of social media addiction and depression were 23.6% and 9.2% respectively. The Pearson's correlation coefficient (r-value) between S-MAT score and CDI T-score was 0.267 (p<0.001). The social media addiction is significantly associated with depression. Further studies to investigate the causal relationship between these two common problems are warranted.

บทคัดย่อ

การศึกษาภาพตัดขวางในครั้งนี้มีวัตถุประสงค์เพื่อศึกษาถึงความชุกและความสัมพันธ์ระหว่างการติดสื่อสังคมออนไลน์และภาวะซึมเศร้าของวัยรุ่นในเขตกรุงเทพมหานคร กลุ่มตัวอย่างคือนักเรียนชั้นมัธยมศึกษาปีที่ 1-6 ที่มีอายุ 13-17 ปี และศึกษาอยู่ในพื้นที่กรุงเทพมหานคร จำนวน 500 คน โดยกลุ่มตัวอย่างตอบแบบสอบถามโดยใช้แบบวัดการติดสื่อสังคมออนไลน์ (S-MAT) ซึ่งเป็นเครื่องมือที่พัฒนาขึ้นใหม่ล่าสุดเพื่อใช้ประเมินขอบเขตของการติดสื่อสังคมออนไลน์ และแบบวัดภาวะซึมเศร้าในเด็ก (CDI) ฉบับภาษาไทย เป็นเครื่องมือที่ใช้ในการคัดกรองภาวะซึมเศร้าในเด็กและวัยรุ่น วิเคราะห์ข้อมูลโดยใช้สถิติสัมประสิทธิ์ความสัมพันธ์ของเพียร์สัน พบว่าความชุกของการติดสื่อสังคมออนไลน์อยู่ที่ร้อยละ 23.6 ความชุกของภาวะซึมเศร้าอยู่ที่ร้อยละ 9.2 ค่าสัมประสิทธิ์ความสัมพันธ์ของเพียร์สันเท่ากับ 0.267 (p<0.001) การติดสื่อสังคมออนไลน์และภาวะซึมเศร้ามีความสัมพันธ์กันอย่างมีนัยสำคัญทางสถิติ การศึกษาในครั้งต่อไปควรจะตรวจสอบถึงลักษณะความสัมพันธ์ของทั้งสองปัญหานี้เพื่อรับรองในเชิงเหตุและผลของลักษณะความสัมพันธ์

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Introduction

Social media is virtual communities where users can create individual public profiles, interact with real-life friends, and meet other people based on shared interests (Kuss, 2011) via Internet such as Facebook, MySpace, Twitter, Instagram, Youtube and online community for chatting such as Whatsapp, Line, Msn, Google Plus etc. Social media use has rapidly increased and assimilated in the part of our modern and active daily life. The mass appeal of social media on the Internet could potentially be a cause for concern, particularly when attending to the gradually increasing amounts of time people spend online and some users may develop an addiction to specific activities they carry out online (Griffiths, 2000). Many of social media users have become obsessive with their use leading to social, academic, occupational and emotional impairment. Adolescent who has suffer from depression are more likely to become as Internet addicted person. Because of the Internet can provide a necessary support to adolescent in term as social support, achievement, the pleasure of control and a virtual world in which they can escape from emotional difficulty in the real world (Blatt, 2004). Social media addiction is a subset of Internet addiction from previous studies shown depression was associated with Internet addiction. Then social media addiction was defined to describe this pathological use and has been examined its impact and association with other health problems including depression.

Objectives of the study

1. To study the prevalence of social media addiction among adolescents in Bangkok.

2. To study the prevalence of depression among adolescents in Bangkok.

3. To study the association between social media addiction and depression among adolescents in Bangkok.

Methodology

Sample and sample size

The present research is a cross-sectional study which was identified the association between social media addiction and depressive symptoms among Thai youth aged between 13-17 years presently studying in secondary school grade 7th-12th in Bangkok. The smallest size sample was approximated to 400 by using the formula of Yamane. To compensate for incomplete data and subjects declination to participate in the study, 20% more of subject was being added. Therefore, the adequate sample size was equaled to 500 subjects. Then, 400 students were randomly selected from the four public secondary schools, and 100 students were randomly selected from one private secondary school.

Instruments

1. Social Media Addiction Test (S-MAT)

The determination of social media addiction was used Social Media Addiction Test (S-MAT), developed by Assoc.Prof. Chanvit Pornnoppadol, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand. The questionnaire was designed to screen for social media addiction, assessing the behaviors related to social media use during the past 3 months. It was investigated characteristic symptoms of social media addiction included excessive use of social media, loss of control over social media usage and functional impairment.

The scale was a 16–item self-reported questionnaire. The S-MAT was compared of each item and could be responded in four choices ranging from 0-3 with the higher scores indicating more severity. The total score was ranged from 0 to 48. Cut of point was shown in Table 1. The S-MAT has been tested for the reliability by using Cronbach's Alpha. The internal consistency was 0.898

Table 1 Cut-off point of Social Media Addiction Test

Group	S-MAT Score
Not Addicted	0-19
Almost Addicted	20-29
Addicted	≥ 30

2. Children's Depression Inventory (CDI)

The depressive symptoms of the subjects were being assessed by the Children's Depression Inventory (CDI). The Thai version of CDI was translated and tested by Prof. Umaporn Trangkasombat. The CDI was suitable for youngsters aged 7 to 17 years, a scale containing 27 items. Each item was being responded in three choices ranging from 0-2 with the higher scores indicating more severity. The CDI was self-reported questionnaire that samples were asked to report about their recent experience (just the last 2 weeks) of affective, cognitive, and behavior symptoms of depression. However, the total CDI scores were ranged from 0 to 54 then converted to CDI T-score ranged from 34 to 100. And the appropriate Cut-off score was used the T-score recommended by Dr.Maria Kovacs (Original version) as shown in Table 2. The CDI-Thai version has been tested for the reliability by using Cronbach's Alpha. The internal consistency was 0.83

Table 2 Cut-off point of Children's Depression Inventory

Group	CDI T-score
Not Depressed	≤ 60
High risk group	61 - 70
Depressed	≥ 71

The statistical method for measuring the social media addition and the depression was used Pearson's product-moment correlation coefficient.

Results

The samples in this collected field were female (58.4%) over than males (41.6%). The mean age was 15.1 years (S.D = 1.5). The majority of samples accessed social media by smart phone/android (58.2%), desktop (25%), tablet (9.2%), and notebook (7.6%) respectively. Additionally, 22.6% reported they used more than 1 device to accessed social media.

Most respondents (77.4%) were used the social media in everyday life. For spending time to attended social media was averaged 5.1 hours/day. Furthermore, 22.6% from the sample were reported that they had occasional use social media by average 9.1 hours/week (Table 3).

Table 3 Demographic information and behavior of social media use

	Number	%	Mean(S.D)
Gender			
Female	292	58.4	
Male	208	41.6	
Age			15.1(1.5)
Device			
Smart phone /Android	291	58.2	

Table 3 Demographic information and behavior of social media use (Cont.)

	Number	**%**	**Mean(S.D)**
Desktop	125	25	
Tablet/iPad	46	9.2	
Notebook	38	7.6	
Frequency of social media use			
Daily	387	77.4	5.1 hrs./day
occasional	113	22.6	9.1 hrs./wk

Duration of daily social media use, the average period in social media addicted was 6.2 hours, whereas the average period in almost addicted was 4.4 hours and finally the average period in not addicted was 1.9 hours (Table 4).

Table 4 Duration of daily social media use

Social media	Duration of daily use (hour)	
addiction level	**Mean**	**S.D**
Not Addicted	1.9	2.4
Almost Addicted	4.4	4.2
Addicted	6.2	5.1

The prevalence of social media addiction was 23.6%. The proportion of social media addiction in female (27.4%) was higher than male (18.3%). And 13 years old was the largest group that addicted to social media (Table 5).

Table 5 The prevalence of social media addiction

Characteristics		Not Addicted	Almost Addicted	Addicted
Gender				
Male	Count	84	86	38
	% within gender	40.4%	41.3%	**18.3%**
Female	Count	99	113	80
	% within gender	33.9%	38.7%	**27.4%**
Total	Count	183	199	118
	% within gender	36.6%	39.8%	**23.6%**

Table 5 The prevalence of social media addiction (Cont.)

Characteristics		Not Addicted	Almost Addicted	Addicted
Age				
13	Count	50	35	37
	% within Age	41.0%	28.7%	**30.3%**
14	Count	21	15	12
	% within Age	43.8%	31.3%	25.0%
15	Count	44	48	22
	% within Age	38.6%	42.1%	19.3%
16	Count	21	51	20
	% within Age	22.8%	55.4%	21.7%
17	Count	47	50	27
	% within Age	37.9%	40.3%	21.8%
Total	Count	183	199	118
	% within Age	36.6%	39.8%	23.6%

The prevalence of depression was 9.2%. The proportion of depression was higher in female (11.3%) than male (6.3%). And 13 years old was the largest group of depression (13.9%) while another group was shown less than 10% (Table 6).

Table 6 The prevalence of depression

Characteristics		Not Depressed	High Risk	Depressed
Gender				
Male	Count	146	49	13
	% within gender	70.2%	23.6%	**6.3%**
Female	Count	203	56	33
	% within gender	69.5%	19.2%	**11.3%**
Total	Count	349	105	46
	% within gender	69.8%	21.0%	**9.2%**
Age				
13	Count	65	40	17
	% within Age	53.3%	32.8%	**13.9%**
14	Count	40	4	4
	% within Age	83.3%	8.3%	8.3%
15	Count	81	24	9
	% within Age	71.1%	21.1%	7.9%

Table 6 The prevalence of depression (Cont.)

Characteristics		Not Depressed	High Risk	Depressed
16	Count	66	20	6
	% within Age	71.7%	21.7%	6.5%
17	Count	97	17	10
	% within Age	78.2%	13.7%	8.1%
Total	Count	349	105	46
	% within Age	69.8%	21.0%	9.2%

The Pearson's correlation coefficient (r-value) between S-MAT score and CDI T-score was 0.267 (p<0.001). The social media addiction is significantly associated with depression (Table7).

Table 7 Association between social media addiction and depression

		S-MAT	CDI T-score
S-MAT score	Pearson Correlation	1	.267[**]
	Sig. (2-tailed)		.000
	N	500	500
CDI T-score	Pearson Correlation	.267[**]	1
	Sig. (2-tailed)	.000	
	N	500	500

Discussion and Conclusions

From the research, it was found all of adolescents used social media and 77.4% reported they were daily user. This finding was supported the study of Victoria was found 90% of American adolescents age between 13-17 years old have used some from social media, 68% of teen text everyday and 51% visit social media daily (Victoria, 2012). The results showed that social media had become an important tool in teens' daily life, with rapid growth year after year. Another evidence to popularity of social media in Thailand is that they are being used heavily by many organizations, private and public, and even celebrities used it to reach out to their fans. This phenomenon is not just limited to the adolescent user bases but to a much wider age groups.

Moreover, teens can easily access social media via multiple, especially mobile, devices. This research found that majority of teens accessed social networking sites by smart phones/Android (58.2%), followed by desktop computers (25.1%), tablets (9.2%), and notebooks (7.5%). In 2012, Sukonthawan found that all of Thai adolescents aged 16 to 18 years owned mobile phones and 45.7% of them accessed the Internet with it (Sukonthawan, 2012).

Daily usage duration is an indication of social media addiction. The addicted group spent on average of 6.2 hours per day, the almost addicted spent 4.4 hours, and finally, the not addicted group spent 1.9 hours. Majority of teens are categorized as almost addicted, spending more than 4.4 hours/day, with the prevalence rate of 39.3%. This result is consistent with Shrek who reported that 68.3% of the Hong Kong teens spent 1-6 hours/day on social media sites and the most addicted group spent as much as 6.2 hours/day (Sherk, 2012). The lack of control over the usage duration leads the user to be obsessive which has impacts on their daily lives and is an indication of social media action. Moreover most people do not realize that they are being addicted to social media and often in denial when being told so. This research was designed and used a social media addiction questionnaire as an evaluation tool. In addition, behavioral addiction may thus be seen from a bio-psychosocial perspective. Just like substance related addiction, social media addiction incorporates the experience of the classic addiction symptoms;

namely mood modification, salience, tolerance, withdrawal, conflict, and relapse (Griffiths, 2005).

This research found that the prevalence of adolescent depression was 9.2% and it was higher in female (11.3%) than male (6.3%). Similarly, Jane surveyed American teens aged 13 to 18 years and also found higher prevalence in girls, 5.9% comparing to 4.6% in boys (Jane, 2006). The report from Supachai shown the prevalence of Thai adolescent's depression was 11.03% (Supachai, 2012). Our results showed that adolescents aged 13 years was the largest group of depression (13.9%) comparing to less than 10% in other groups. Currently, the number of early onset depression is increasing every year which may be caused by living in social environment filled with competitions such as in education, financial status, or even traffic jams, which cause higher stress level.

From the study, it is observed that the subjects aged 13 years have highest prevalence of social media addiction (30.3%) and are the highest prevalence of depression (13.9%) comparing to other age groups. From the Theory of Eight Stages of Psychosocial Development by Erikson (Muuss, 1988), it can be explained that early adolescents go through puberty with rapid changes physically and emotionally and development of sexual maturity. Through a surge in hormone production, teens in this transitional period experience emotional turbulence and are easily irritated. They also have a strong need to express themselves. The age of 13 is also the time that most teens transition from primary to secondary school and have new groups of friends. Teens in this age group also start keeping distance from the family. They have an urge to seek more approval from their peers and find social media to be an effective tool for finding new friends and seeking approvals. Also,

comparing the older teens, they are still not very good at controlling themselves which make them more likely to be addicted to social media. On the other hand, teens can develop depression from not gaining approval from the peers or not getting attention from opposite sex. The early adolescents are more susceptible to mood swing than the late adolescents because they still cannot effectively deal with change in emotions and disappointments. Therefore, depression is more prevalence in this age group.

While there are previous studies in the association between Internet addition and Comorbid of Dysthymic Disorder, this study is the first attempt in forming an association between social media addition and depression. The technique used in finding association is Pearson's product-moment correlation. The Pearson's R-value between S-MAT score and CDI T-score of this sample set was 0.267 which indicates statistical significance of positive correlation between social media addiction and depression. The cause and effect analysis between the two is beyond the scope of this study. It is widely accepted that social media addiction was not considered a medical diagnosis criteria but rather a subset of Internet addiction. This view was supported that Bernardi and Pallanti who reported that 7% of adult cases of Internet addiction had Comorbid of Dysthymic Disorder (Bernardi and Pallanti, 2009). In addition, Ha and Kim also stated an association between Internet addiction and depression (Ha and Kim, 2009).

In summary, this research showed the prevalence of social media addiction was 23.6% and 9.2% of depression, Pearson's R-value between SoMTe score and CDI T score was 0.267. The study suggests that the association between social media

addiction and depression was statistically significant. Although the social media addiction was not a medical diagnostic criterion, it had negative effects on mental health, so we must concert to using social media the right way by raising awareness. Additionally, this relationship should be further studied to evaluate if social media addition can cause depression. Even if the research scope is the Pearson's correlation coefficient (r-value) between S-MAT score and CDI T-score was 0.267 (p<0.001), that weakly association so the other factors also need to considered.

Research Recommendations

    1. Educate parents to limit the duration of social media use in adolescents to less than 2 hrs./day to prevent future problems of social media addiction, as from this study, the non-addicted group used social medias on average less than 1.9 hrs./day.

    2. Encourage schools to implement safety zone where social media usages are prohibited during classes. Teachers should not use social networking sites to communicate with students about lesson or homework. And engage students in extracurricular activities such as sports and music.

    3. Encourage schools or parents to have their teens regularly take the Social Media Addiction Test (S-MAT), which consists of only 16 questions and can be completed within 10 minutes, to evaluate social media addiction.

    4. The further studies should investigate about the risk factor and motivation of social media addiction in adolescents.

    5. Further studies could investigate whether the causal relationship between social media addiction and depression are warranted.

    6. Further studies could focus specifically on the 13 year age group as it has the highest prevalence for social media addiction and depression.

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