Facebook use and adolescents' emotional states of depression, anxiety, and stress.

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Abstract

Background: Facebook (FB) is becoming an increasingly salient feature in peoples' lives and has grown into a bastion in our current society with over 1 billion users worldwide –the majority of which are college students. However, recent studies conducted suggest that the use of Facebook may impacts individuals' well being. Thus, this paper aimed to explore the effects of Facebook usage on adolescents' emotional states of depression, anxiety, and stress.

Method and Material: A cross - sectional design was utilized in this investigation. The study population included 76 students enrolled in the Bachelor of Science in Nursing program from a government university in Samar, Philippines. Facebook Intensity Scale (FIS) and the Depression Anxiety and Stress Scale (DASS) were the primary instruments used in this study.

Results: Findings indicated correlation coefficients of 0.11 (p=0.336), 0.07 (p=0.536), and 0.10 (p=0.377) between Facebook Intensity Scale (FIS) and Depression, Anxiety, and Stress scales in the DASS. Time spent on FBcorrelated significantly with depression (r=0.233, p=0.041) and anxiety (r=0.259, p=0.023). Similarly, the three emotional states (depression, anxiety, and stress) correlated significantly.

Conclusions: Intensity of Facebook use is not directly related to negative emotional states. However, time spent on Facebooking increases depression and anxiety scores. Implications of the findings to the fields of counseling and psychology are discussed.

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Introduction

In the recent years, social networking sites have gained phenomenal popularity among youth. The birth of Facebook in 2004 has enabled individuals all over the world to connect to one another, communicate, develop and maintain friendships. Facebook, the most inexpensive and convenient way to communicate with a social network and dubbed as the world's most well-liked social network service today has grown to an estimated 1 billion users since its launch in 2004. In Philippines alone, there are about 30 million active users as of 2012– making it as the 8th country in the world with high number of use.[1]

Studies indicated that among Facebook users, college students in particular are the heavy users. [2 – 4] Facebook is used by about 85 to 96 percent of college students according to previous studies conducted. [5 – 7]In the Philippines, the largest age group of Facebook users is currently 18 – 24with total of 12 million users, followed by the users in the age of 25 – 34. [1]Reasons for joining this site include maintenance of relationship, to meet new people, to communicate information, to express their beliefs, and some used Facebook out of boredom.[8 – 10] This phenomenal advancement of social networking is no doubt has revolutionized the concept of socialization and communication among adolescents.

In spite of the promising advantages these unique technological advances offered such as social capital and friendship articulation[11], there

have been increasing concerns regarding its negative outcomes to adolescents' well being. Some of the off-putting outcomes that are related to Facebook use involved personality problem and unwanted behaviors such as stalking. [12, 13]In the study conducted by O'Dell, it was reported that students who use Facebook may feel depressed or lonely. [5]Meanwhile, Gabre & Kumar [14]commenced that student who used Facebook while studying reported higher levels of stress and were less in control of things. Klingensmith[15]also found high usage of Facebook to be positively related to feelings of loneliness, shyness, and "friend sickness," which is described as the distress one experiences at the loss of old friends. A study conducted by Schwartz [16] found Facebook intensity, or high usage of Facebook, frequency of status updates, and update intensity to be negatively related to self-esteem. Other study however opposes their findings saying that Facebook use can enhance self-esteem[17] even linked it to an increase in overall life satisfaction. [11, 18]

There is an abundance of researches conducted associating Facebook use and emotional well being.[12-18] In the Philippines, as to the authors' knowledge, only one study had been conducted to examine connection between Facebook use and depression among Filipino adolescents. [19]However, variables like anxiety and stress were not included. Additionally, the link between depression, stress, and anxiety and Facebook usage has not previously been scientifically researched. For this current investigation, the researcher is interested in identifying relationship between Facebook usage and negative emotional states which makes this study important.

Research Objective

This paper aimed to explore the effects of using Facebook on adolescents' emotional states of depression, anxiety, and stress.

Methods

Research Design and Settings

A descriptive correlational research design was utilized in this investigation. The study population included 76 nursing students enrolled in the Bachelor of Science in Nursing program from a government university in Samar, Philippines.

Measures

The self-report questionnaires consisted of three parts: 1) Demographic Information, 2) Facebook Intensity Scale, and 3) Depression Anxiety and Stress Scale (DASS) were used in this investigation.

Demographic Information

General information included age, gender, year level, family monthly income, and family structure.

Facebook Intensity Scale

The Facebook Intensity Scale (FIS) [11] was developed as part of an investigation of undergraduates' social networking site usage and social capital, the resources accumulated through being part of a network. An important part of this study was the development of a scale to measure Facebook intensity, including the active engagement with Facebook activities, the extent to which individuals were emotionally connected to Facebook, and how well Facebook was integrated into users' daily lives. The Facebook Intensity Scale has eight questions designed to measure active engagement and emotional connection with Facebook (alpha=.83 in our sample). Example questions are "Facebook is part of my everyday activity" and "I would be sorry if Facebook shut down." Two additional Facebook Usage scales were used to measure how people used Facebook to meet new people (On to Offline; 1 item: "I use Facebook to meet new people") and connect with existing offline contacts (Off to Online; 5 items, alpha=.68: example item: "I have

used Facebook to check out someone I met socially"). Participants answered each question from these scales on a five point Likert scale with 1=strongly disagree and 5=strongly agree.Other FB variables were also included in the questionnaire such as the number of Facebook friends and time spent online on a typical day. The questionnaire was validated for its reliability resulting in statistical value of 0.90 (Cronbach's alpha).

Depression Anxiety and Stress Scale (DASS)

The DASS is a 42-item questionnaire which includes three self-report scales designed to measure the negative emotional states of depression, anxiety and stress.[20]Each of the three scales contains 14 items, divided into subscales of 2-5 items with similar content. The Depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia. The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The Stress scale (items) is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. Respondents are asked to use 4-point severity/frequency scales to rate the extent to which they have experienced each state over the past week.The compliance questionnaire was validated for its reliability resulting in statistical value of 0.89 (Cronbach's alpha).

The score for each of the respondents over each of the sub-scales are then evaluated as per the severity-rating index on Table 1.

Data Analysis

After the securing the approval of the Health Ethics Committee of Samar State University, the researcher obtained the signed consent form from the respondents upon agreeing to participate in the investigation and the questionnaire were distributed to the respondents.Confidentiality and anonymity of the respondents were maintained all throughout the investigation.The data from the questionnaire were coded and entered into a computerized data base and analyzed using SPSS, version 19. Frequencies and percentages were used for analyzing the selected socio-demographic data while mean and median were used to assess respondents' responses to the Facebook Intensity Scale. Pearson's correlation coefficient was utilized to test the relationship between selected Facebook variables and negative emotional states variables such as depression, anxiety, and stress. A *p value* of equal to or less than 0.05 was considered statistically significant.

Results

Eighty one percent of the students were female and within the age range of 16 – 20 years old. More than one third of the respondents (n = 31, 40.79) were third year nursing students with a family income that ranges from PhP 5,000 to PhP 20,000. As to family structure, majority of the respondents (n = 50, 65.79%) belong to an extended family. (See table 2)

When asked whether they own Facebook accounts, majority of the respondents (n = 75. 98.68%) reported to have existing FB accounts. More than three fourths had been member of the said SMS group for about 3 to 4 years. As to number of Facebook friends, about 77.63% (n = 59) have more than 400 friends with an average Facebook usage per day of 1.30 hours. (See table 3)

Reflected on table 4 were the responses of the respondents on the Facebook Intensity Scale (FBI). About one third of the respondents (38.84%, n = 28) claimed that they used Facebook to find new friends. However, nearly half of them (46.05%, n = 35) used privacy settings to select parts of their profile to share with others. When asked whether Facebook helps them to feel closer to their

friends, only 39.47% (n=30) agreed and 11.84% (n=9) strongly agreed. Only a little portion (10.52%, n=8) claimed that Facebook is part of their everyday activity and daily routine.

Table 5 shows the prevalence of depression, anxiety, and stress among nursing students. More than half of the respondents (51.32%) had at least one or more symptoms of negative emotional states while only at about 48.68% were free of symptoms. Prevalence rates of depression, anxiety, and stress among respondents were 28.95%, 48.68%, and 25% respectively.

Table 6 reveals the correlations between respondents' selected variables, FIS and DASS subscales. Pearson product-moment correlations coefficients were calculated for selected Facebook variables and the DASS scores. A correlation coefficients of 0.11 (p=0.3356), 0.07 (p=0.5360), and 0.10 (p=0.3769) were identified between FBI and DASS indicating a not significant relationship. Similar results were found between number of FB friends and DASS. Time spent online correlated significantly with depression (r=0.2330, p=0.0414) and anxiety (r=0.2585, p=0.0232). Similarly, the three emotional states (depression, anxiety, and stress) correlated significantly.

Discussions

Facebook remains as the dominant social media sites among adolescents, as 85 to 96 percent of its users are college students [2 – 4] with an average time spent on FB of 10 to 120 minutes. [8, 9, 11] In the present study, about 99% was Facebook users and spent at about 90 minutes on Facebook. This is an avowal that Facebook is still the preferred approach to social networking among college students primarily because of the intuitive appeal brought about by this technology. Facebook provides its users with a liberty to share information about themselves in their profiles, including pictures, favorite music or videos, and even their contact information. In the present study, it is worth observing that nearly half of the

respondents used privacy settings to select parts of their profile to share with others. Perhaps they are apprehensive that the information that they will post will be read/seen by individuals whom the information is not intended for, or the worst is that the information given by the user could be abused by stalkers or identity thieves.

Results also demonstrated that intensity of Facebook use alone was not sufficiently related to negative emotional states of depression, anxiety, and stress. This result is in keeping with previous studies conducted. For instance, in the study conducted by Jelenchick et al.,[21] no evidence of association between social networking sites use and clinical depression were found. Meanwhile, Datu et al., [19] also reached the same conclusion that there is no significant association between Filipino respondents' level of depression and the intensity of Facebook use. The results tend to reflect that indeed there is no one particular factor that will lead to the onset of depression, anxiety, and stress. Unlike with other known illnesses, there is no simple explanation as to what causes negative emotional states. For example, stress and depression can be due to a number of factors such as psychological, psycho social, hereditary, evolutionary, and biological factors.[22] Similarly, various psychodynamic,psychoanalytic, behavioral, cognitive, genetic and biological theories have beenproposed to explain why a person experiences of anxiety. [28]

In identifying relationship between negative emotional states and Facebook use, aside from correlating FIS and emotional states, we also examined other variables such as FB friends and time spent on FB. In our present study, it was observed that the number of time spent on Facebooking is associated with increased depression and anxiety scores. This result is in keeping with a more recent study conducted by Pantic and Collegue among high school students. The authors noted increases in depression score

as the time spent on social networks increased and viceversa.[26] This may be due to the fact that investing so much time on FB, just like with other social media may increase the possibility of encountering negative comments, explicit news, and negative updates from FB friends that may trigger the developments of these emotional states. Further, it may also limits the time one has to socialize.

Depression frequently occurs with other psychiatric problems. In our study, significant correlations exist between depression, and anxiety, and stress. This is an affirmation of the claims of previous authors' claim that people with depression have high rates of comorbidity with other mental disorders.[22] Similarly, Robert Sapolsky[23] argues that the relationship between stress, anxiety, and depression could be measured and demonstrated biologically.

With the above findings, given that more than 95% of the college students maintain Facebook profile, it may seem that this avenue may also provide innovative opportunities for school administrators to identify students at risk. Facebook provides a means for capturing behavioral traits that are congruent to an individual's thinking and emotion. The emotional expression in the updates and social media postings may indicate feelings of worthlessness, sadness, helplessness, and self-hatred that are indicative of depression.[27] Lewis et al.,[24] reported that college students disclose their mental health concerns on FB status updates. In a recent study conducted by Moreno et al.,[25] 25% of respondents disclosed one or more depressive symptoms on status update. Such disclosures may be used to facilitate referral for possible mental health concerns. Moreover, Facebook may also serve as a good avenue for raising awareness regarding depression, anxiety and stress.

While this study is essential as it is the pioneer analysis conducted in the University, nevertheless is has some potential limitations to be considered.

First, the exclusion of students from other university in other provinces may limit the generalizability of this investigation. Secondly, the research design could have affected the responses of the respondents since they were asked to recall their past experience/feelings, some important experiences/feelings may have not been recalled.

Conclusions

It can be inferred from this investigation that intensity of Facebook use of among Filipino college students are not substantially linked to their levels of depression, anxiety, and stress. Result of this investigation contrasts with the empirical evidence suggesting linkage between Facebook use and negative emotional states. However, time spent on FB increases the likelihood to develop depression and anxiety. Thus, parents should monitor and supervise online activities thru active parental involvement and constant communication. Moreover, the wide accessibility of social networking sites would allow family members and university administrators to identify students who would be at risk of developing negative emotional states and in increasing awareness on it.

Conflict of Interest

The authors report no conflict of interest.

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ANNEX

Table 1. Depression, Anxiety, and Stress Scale (DASS) subscales and severity – rating index

	Depression	Anxiety	Stress
Normal	0 - 9	0 – 7	0 – 14
Mild	10 - 13	8 – 9	15 – 18
Moderate	14 – 20	10 – 14	19 – 25
Severe	21 – 27	15 – 19	26 – 33
Extremely Severe	28 and above	20 and above	34 and above

Table 2. Demographic characteristics of the study population

Characteristics	Category	N (%)
Age	10 – 15 years old	2 (2.63)
	16 – 20 years old	62 (81.56)
	21 – 25 years old	12 (15.79)
Gender	Male	14 (18.42)
	Female	62 (81.56)
Year level	Year 1	16 (21.05)
	Year 2	18 (23.68)
	Year 3	31 (40.79)
	Year 4	11 (14.47)
Family Monthly Income	Less than 5000/mos	16 (21.05)
	5001 – 10000/mos	12 (15.79)
	10001 – 15000/mos	14 (18.42)
	15001 – 20000/mos	14 (18.42)
	20001 – 25000/mos	8 (10.53)
	25000 and above	12 (15.79)
Family Structure	Nuclear	27 (35.53)
	Extended	50 (65.79)

Table 3. Respondents' FB related variables

Characteristics	Category	N (%)
With FB	With FB	75 (98.68)
	Without FB	1 (1.32)
FB years of membership	1 year	2 (2.63)
	2 years	7 (9.21)
	3 years	29 (38.16)
	4 years	30 (39.47)
	5 years	6 (7.89)
	6 years	0 (0)
	7 years	1 (1.32)
Facebook Friends	25 or less	0 (0)

Characteristics	Category	N (%)
	26-100	0 (0)
	101-150	4 (5.26)
	151-200	3 (3.95)
	201-250	5 (6.58)
	251-300	3 (3.95)
	301-350	2 (2.63)
	400 or more	59 (77.63)
Time Spent on FB (per day)	0-30 minutes	15 (19.73)
	31 minutes to 1 hour	21 (27.63)
	1-2 hours	24 (31.56)
	2-3 hours	8 (10.53)
	3 or more hours	7 (9.21)

Table 4. Responses on the Facebook Intensity Scale

Statement	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)	Mean
1. I use Facebook to find new friends	4 (5.26)	9 (11.84)	34 (44.74)	22 (28.95)	6 (7.89)	2.23
2. I use Facebook to better understand the interests and activities of my friends	4 (5.26)	7 (9.21)	41 (53.95)	21 (27.63)	2 (2.63)	2.13
3. Facebook accurately displays my relationships with others	7 (9.21)	13 (17.11)	29 (38.16)	20 (26.32)	6 (7.89)	2.07
4. I use privacy settings to select what parts of my profile I share with others	2 (2.63)	5 (6.58)	11 (14.47)	22 (28.95)	35 (46.05)	3.11
5. I use Facebook "Lists" to create different levels for friends like "Close Friends," "Home Town Friends," "College Friends," etc.	6 (7.89)	13 (17.11)	26 (34.21)	25 (32.89)	5 (6.58)	2.13
6. Facebook helps me feel closer to my friends	3 (3.95)	10 (13.16)	24 (31.58)	30 (39.47)	9 (11.84)	2.43
7. Facebook is part of my everyday activity	16 (21.05)	32 (42.11)	19 (25.00)	6 (7.89)	2 (2.63)	1.28
8. I am proud to tell people I'm on Facebook	6 (7.89)	32 (42.11)	30 (39.47)	5 (6.58)	2 (2.63)	1.53
9. Facebook has become part of my daily routine	21 (27.63)	28 (36.84)	18 (23.68)	6 (7.89)	2 (2.63)	1.20
10. I feel out of touch when I haven't logged onto Facebook for a while	15 (19.74)	36 (47.37)	20 (26.32)	4 (5.26)	0 (0)	1.17
11. I feel I am part of the Facebook community	3 (3.95)	13 (17.11)	31 (40.79)	23 (30.26)	6 (7.89)	2.19
12. I would be sorry if Facebook shut down	7 (9.21)	18 (23.68)	27 (35.53)	16 (21.05)	7 (9.21)	1.97

Table 5. Prevalence of Depression, Anxiety, and Stress

Emotional States	Level of Emotional States					
	Normal	Mild	Moderate	Severe	Extremely Severe	Overall
Depression	71.05(54)	17.10(13)	7.89(6)	3.95(3)	0(0)	**28.95 (22)**
Anxiety	51.31(39)	11.84(9)	19.74(15)	9.21(7)	7.89(6)	**37 (48.68)**

			Level of Emotional States			
Stress	75(57)	13.16(10)	10.52(8)	1.31(1)	0(0)	**19 (25)**
With One Symptom			**11 (14.47)**			
With more than one Symptoms			**28 (38.84)**			

Table 6. Correlation Matrix between selected FB variables and DASS

Variables	FIS	FRI	TIME	DEP	ANX	STR
1. FIS**(FIS)**	1					
2. Number of FB Friends**(FRI)**	0.4074*	1				
3. Time Spent on FB **(TIME)**	0.0740	0.3048*	1			
4. Depression**(DEP)**	0.1112	0.1356	0.2330*	1		
5. Anxiety**(ANX)**	0.0716	0.1567	0.2585*	0.8383*	1	
6. Stress**(STR)**	0.1021	0.1120	0.1644	0.8692*	0.894*	1

Correlation significant at the 0.05 level (two-tailed)