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Relationships between Self-esteem and Depression with Facebook Addiction among the University Students

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ABSTRACT

The study aims to determine the level of acceptance and identify the factors influencing the relationships of self-esteem and depression with Facebook addiction. In a cross-sectional study on a sample of 350 students, we tested the existence and strength of this relationship using the Bergen Facebook Addiction Scale, Rosenberg's Self-Esteem Scale and Patient Health Questionnaire, face to face interview method was created to collect data. The main outcome of this study found that 52% of students are addicted to Facebook and 48% of students are not addicted to Facebook. In logistic regression models, females are 2.352 times more likely to Facebook addicted than the respondents who are male. The findings of the study provide empirical evidence for the effect of Facebook addiction on students' lower self-esteem and severe depression status differ statistically from no Facebook addicted students. Lower self-esteem was positively associated with Facebook addiction. Facebook addiction was positively related to depression and those who have suffered severe depression are frequently more Facebook addicted. Study findings also demonstrate that academic performance (CGPA) is a negative effect with Facebook addiction even after adjusting for other variables. Concededly say that the recommendations presented in this research may help to eradicate Facebook addiction.

Keywords

Facebook addiction; Facebook usage; Self-esteem; Depression; Academic performance (CGPA); Computer and Education

Introduction

Facebook (FB) is the most visited social networking website and it has become an important part of pretty much every aspect of life [1]. It provides to people to share their social associations, bring about gatherings held between the people who are now and again dormant ties [2]. According to Worldometer the population of Bangladesh this year (2020) is about 16 core 49 lac and among them, 19.7% of their total populations are Facebook users in Bangladesh. Social media addiction like Facebook has been seen as related to a large group of passionate, relational, wellbeing, and academic performance [3,4,5]. In 2014, Wickham, &Acitelli found that excessive Facebook use was associated with depression [6]. In the case of Facebook addiction, it has been

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demonstrated that individuals with more addiction levels of Facebook addiction scored with lower self-esteem than higher self-esteem Facebook users [7, 8].

Facebook addiction is portrayed as the maltreatment of Facebook until it gets badly designed to one's psychological prosperity, relational connections, and even execution [9]. Facebook takes as a significant piece of their everyday life and they provide a lot of help to university students not only for a social purpose but also for educational purposes. Spending more and more time on Facebook unintentionally raises the chance of addiction in terms of Facebook use. In its most common form, scholars have named this phenomenon of Facebook addiction [10]. Overly concerned about Facebook, having a strong motivation for logging onto Facebook so frequently which impacts daily activities, real social life, interpersonal relations, psychological well-being, can be defined as Facebook addiction [11]. It is required for students for the aspect of knowledge-based society to improve their capability in using technology for putting a plan into their work in a technological setting [12]. Facebook is an online social network site in which users can share thoughts, ideas, pictures and other content with friends and family members and connect with either former or new friends, making the platform very popular with university students [2], [14]-[17].

Other systematic reviews have also found a meaningful relationship between social media use and depression [19]- [20]. Facebook use can steer to mental illnesses such as depression. Research has indicated that depression has an association with Facebook use [6], [21]. Depression is a typical and genuine mental issue and influences people's everyday schedule exercises and capacities, for example, thinking, feeling, resting, eating, working, and contemplating [13]. Ellison et al (2007) found out that youngsters with low self-esteem find Facebook more beneficial as compared to the ones with high self-esteem [15]. Being exposed to social comparison through social media negatively influences people well-being and self-esteem [6]. Due to the use of Facebook people with low self-esteem possess more social capital than the ones with high self-esteems [29]. Studies have found that individuals with low self-esteem try to compensate by becoming active in on-line activities, such as spending more time on Facebook, increasing the frequency of logging on to Facebook, and having more friends on Facebook. Both depression and low self-esteem trigger negative thoughts in your mind and depression can be affected by self-esteem [6]. It was reported that social media platforms such as Facebook could be consistent, reliable sources for measuring the depression and self-esteem levels of the individuals.

The goal of this study was to determine the level of acceptance and identify the factors influencing the relationships of self-esteem and depression with Facebook addiction among university students in the MBSTU campus. This study examined the association between Facebook addiction and self-esteem among university students by measuring the collective amount of time spent on Facebook, the amount of time spent on one own profile and estimating feelings of self-esteem and self-perception. We investigated the relations of social media addictions with self-esteem and academic performance in university students and examined the role of self-esteem as a potential mediator for the relations.

Methods

The present cross-sectional survey study was conducted among the students of MawlanaBhashani Science and Technology University, Tangail (Bangladesh) with data collected from February to April 2020. We have collected data by using face to face interview method which is usually carried out in a structured way. Interviews involve the use of a set of predetermined questions and

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highly standardized techniques of recording. Using a convenience sampling method, the data were collected from 350 participants using a face-to-face survey through structured questionnaires. Thus, the interviewer in a structured interview follows a rigid procedure laid down, asking questions in a form and order prescribed. The survey comprised closed questions and took approximately 15 minutes to complete.

Data collection: Students of MBSTU are the study population of this study. Currently, there are 4451 students in 15 departments under five faculties. The study area of this study was MawlanaBhashani Science and Technology University, SantoshTangail. At present, there are five faculties. They are engineering faculty, Life science, Science faculty, Faculty of the Business Studies, and Social Science faculty. Under-five faculties there is fifteen departments, these are Computer Science and Engineering (CSE), Information and Communication Technology (ICT), Textile Engineering (TE), Environmental Science and Resource Management (ESRM), Criminology and Police Science (CPS), Food Technology and Nutrition Science (FTNS), Biotechnology and Genetic Engineering (BGE), Pharmacy, Biochemistry and Molecular Biology (BMB), Business Administration (BA), Statistics, Chemistry, Mathematics, Physics, Economics.

Independent variable: We have considered some variables as an independent variable such as gender, age, religion, academic year, permanent residence, family type of the respondent, Father's educational level and mother's educational level, living place of the respondent, monthly income of the respondent's family, living alone of the respondent, duration of study hour, academic performance(CGPA), living alone of the respondent, sleeping status, frequency of Facebook access, duration of using Facebook, spending time mostly in Facebook, relationship status, smoking status, physical comorbidities, physical activities, self-esteem status, depression status.

Dependent variable: Facebook addiction of the respondent is the dependent variable in our study and we have sorted this variable into two classifications (Addicted and No addicted).

Bergen Facebook Addiction Scale (BFAS): Andreassen, et al. (2012) has studied on development of the Facebook addiction scale as a new scale for measuring Facebook addiction which is known as Bergen Facebook Addiction Scale (BFAS) [9]. Eventually, Andraessen and colleagues finalized the BFAS to six basic criteria, with participants asked to give one the following 5 responses to each one: (1) Very rarely, (2) Rarely, (3) Sometimes, (4) Often, and (5) Very often. These are - 1) You spend a lot of time thinking about Facebook or planning how to use it. 2) You feel an urge to use Facebook more and more. 3) You use Facebook in order to forget about personal problems. 4) You have tried to cut down on the use of Facebook without success. 5) You become restless or troubled if you are prohibited from using Facebook. 6) You use Facebook so much that it has had a negative impact on your job/studies. Andreassen and colleagues suggest that scoring "often" or "very often" on at least four of the six items may suggest the respondent is addicted to Facebook.

Patient Health Questionnaire (PHQ-9): The PHQ-9 is a 9-question instrument given to patients in a primary care setting to screen for the presence and severity of depression. The items are scored on a 4-point Likert scale [28]. Over the past two weeks on a 4-point Likert scale (0 = not at all, 1 = several days, 2 = more than half of the days, and 3 = nearly every day). Over the last 2 weeks, how often have you been bothered by any of the following problems? There are nine statements

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that help to measure depression. These are- 1) Little interest or pleasure in doing things. 2) Feeling down, depressed, or hopeless. 3) Trouble falling/staying asleep, sleeping too much. 4) Feeling tired or having little energy. 5) Poor appetite or overeating. 6) Feeling bad about yourself or that you is a failure or has let yourself or your family down. 7) Trouble concentrating on things, such as reading the newspaper or watching television. 8) Moving or speaking so slowly that other people could have noticed or the opposite; being so fidgety or restless that you have been moving around a lot more than usual. 9) Thoughts that you would be better off dead or of hurting yourself in some way.

Rosenberg Self-esteem Scale: The Rosenberg Self-Esteem Scale is a 10-item self-report measure of global self-esteem & related to overall feelings of self-worth or self-acceptance. Self-esteem has a strong relation to happiness. Researchers persuaded that high self-esteem does lead to greater happiness. Low self-esteem is more likely than high to lead to depression under some circumstances. The items are answered by the respondents on a four-point scale ranging from strongly agrees to strongly disagree. These ten statements are – 1) On the whole, I am satisfied with myself. 2) At times I think I am no good at all. 3) I feel that I have a number of good qualities. 4) I am able to do things as well as most other people. 5) I feel I do not have much to be proud of. 6) I certainly feel useless at times. 7) I feel that I'm a person of worth, at least on an equal plane with others. 8) I wish I could have more respect for myself. 9) All in all, I am inclined to feel that I am a failure. 10)I take a positive attitude toward myself. When answering value is between 0-14 then it declares to low self-esteem, 15-25 then it declares to normal self-esteem and when the value lies between 26-30 then it declares to high self-esteem.

Statistical Analysis: In this study, the entire analysis is done on the personal computer which is now one of the most effective and wonderful technological inventions. Different software has been used to complete this study. The entire analysis is done by a statistical package named SPSS (Statistical Package for Social Science, version-23), Microsoft Excel (2016), which is used to draw the plot. Microsoft word (2016) is used to prepare all the outcomes that are presented in this study. SPSS for Windows is a comprehensive and flexible statistical analysis and the data management system. To analyze the analysis all independent variables are tested by dependent variables Facebook addiction status.

Ethical Approval: This study was ethically approved by the department of statistics, MawlanaBhashani Science and Technology University. They provide a written statement to collect data from Facebook user of this university and also ensured the confidentiality of their participation.

Data Analysis

The BDHS dataset covers info on an extensive scope of factors. The dataset was checked to incorporate just those participants for whom all data vital for the current investigation were accessible. Before starting the analysis, we weighted the data by sample weights to create population estimates. For displaying the basic sociodemographic features of the sample population descriptive analysis (frequency distribution) was performed. For demonstrating the group differences in regarding pregnancy expectations through the independent variables Pearson's χ^2tests was implemented. To guarantee legitimacy for additional examination the independent variables were checked for multicollinearity. Based on the bivariate analysis results,

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variables that showed statistically significant association ($p < 0.05$) with pregnancy intention status were entered into the binomial logistic regression model all together and assess the net effect of unmet need for contraception on pregnancy intention status after controlling for other variables. For measuring the strength of relationships between pregnancy expectation status and the explanatory variables in the model, adjusted odds ratios (AOR) with 95% confidence intervals (CI) were calculated. Finally, the Wald test (a two-tailed p-value of <0.05) is performed to test the significance of the parameters. All analyses were done by using IBM SPSS Statistics version 23 and report writing was done by using MS word.

Results

Table-1 demonstrate that the association between dependent variable with Facebook addiction among the university students in MBSTU campus

Table- 1: Contingency table of independent variables with Facebook addiction

Some demographic and psychological variables	**Category**	**Facebook addiction Scale**		**Pearson Chi-Square value**	**df**	**P-value (chi-square test)**
		Category percentage (%)				
		Addicted (%)	**No addicted (%)**			
Gender	Male	46.2	53.8	5.192	1	0.023*
	Female	58.3	41.7			
Religion	Islam	51.6	48.4	0.540	2	0.764
	Hindu	52.6	47.4			
	Others	66.7	33.3			
Age	19-21	81.9	18.1	41.842	3	0.000*
	21-23	48.6	51.4			
	23-25	37.3	62.7			
	25-27	42.0	58.0			
Academic year	1st year	91.7	8.3	47.776	4	0.000*
	2nd year	61.0	39.0			
	3rd year	46.1	53.9			
	4th year	33.3	66.7			
	Masters	43.5	56.5			
Faculty of the respondent	Engineering	51.5	48.5	2.576	4	0.631
	Life Science	54.0	46.0			
	Science	50.5	49.5			
	Business	38.1	61.9			
	Social Science	60.0	40.0			

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Permanent Residence	Urban	53.4	46.6	0.146	1	0.703
	Rural	51.3	48.7			
Family type	Nuclear	50.4	49.6	0.602	1	0.438
	Joint	54.8	45.2			
Living place of the respondent	Residential	47.5	52.5	3.882	1	0.049*
	Non-residential	58.2	41.8			
Income of the respondent's family	≤ 15000	50.9	49.1	0.585	2	0.747
	15000-25000	50.9	49.1			
	≥ 25000	55.8	44.2			
Average study hour	1-3 hours	55.9	44.1	7.170	3	0.067
	4-6 hours	51.2	48.8			
	7-9 hours	33.3	66.7			
	≥ 9 hours	26.7	73.3			
Academic performance (CGPA)	Low (2.00-2.99)	66.7	33.3	2.978	2	0.226
	Medium (3.00-3.49)	51.2	48.8			
	Upper (3.50-4.00)	48.7	51.3			
Frequency of Facebook access	Once a week	28.6	71.4	12.933	3	0.005*
	Twice/Thrice days a week	29.4	70.6			
	Fourth/Fifth days a week	32.4	67.6			
	Daily	56.4	43.6			
Duration (Hours) of using Facebook per day	≤ 30 Minutes	16.7	83.3	36.791	4	0.000*
	30 Minutes–1 Hour	17.6	82.4			
	1- 3 Hours	45.1	54.9			
	3-5 Hours	51.9	48.1			
	≥ 5Hours.	75.0	25.0			
Sleeping status	Normal (6-7 h)	29.7	70.3	71.524	2	0.000*
	≤ Normal	74.7	25.3			
	≥ Normal	28.6	71.4			
Relationship status	Single	47.2	52.8	7.980	3	0.046*
	Married	41.4	58.6			
	Engaged	62.5	37.5			
	Relationship	61.5	38.5			
	Newsfeed	55.2	44.8			
	Profile Update	31.0	69.0			
	Chatting	68.4	31.6			

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Spending time mostly on Facebook	Page	44.4	55.6	24.424	10	0.007*
	Group	37.5	62.5			
	Online Business	50.0	50.0			
	Blood campaign	33.3	66.7			
	Personal information sharing	45.5	54.5			
	Friend Connection	25.0	75.0			
	Educational purposes	45.7	54.3			
	Multi-purposes	65.5	34.5			
Living alone	Yes	75.1	24.9	105.988	1	0.000*
	No	19.3	80.7			
Smoking status	Yes	55.4	44.6	0.366	1	0.545
	No	51.2	48.8			
Physical activities	Regular	41.3	58.7	11.370	3	0.010*
	Irregular	57.3	42.7			
	Often	38.9	61.1			
	None	60.3	39.7			
Physical co-morbidities	Yes	53.0	47.0	0.056	1	0.813
	No	51.6	48.4			
Physical co-morbidities diseases	Hypertension	56.3	43.8	3.769	6	0.708
	Diabetes Mellitus	20.0	80.0			
	Anemias	50.0	50.0			
	Tuberculosis	42.9	57.1			
	Obesity	62.1	37.9			
	Menstrual Disturbance	50.0	50.0			
Mental stress	Yes	56.8	43.2	3.904	1	0.048*
	No	46.3	53.8			
Self-esteem status	Low	61.1	38.9	12.436	2	0.002*
	Normal	42.9	57.1			
	High	39.1	60.9			
Depression status of the respondents	Minimal	27.3	72.7	14.051	4	0.007*
	Mild	48.0	52.0			
	Moderate	53.6	46.4			
	Moderately severe	62.5	37.5			
	Severe	70.6	29.4			

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Among the study variable, the results of bivariate analysis in table-1 demonstrate that the association between dependent variable with Facebook addiction among the university students in MBSTU campus. From the table demonstrate that here first predictor is gender where 46.2% students are male and 58.3% students are female who they are Facebook addicted. Here p-value is 0.023. A chi-square test for independence was used to assess whether Facebook addicted was associated with respondents' gender. The chi-square test was statistically significant ($\chi 2 = 5.192$, $p< 0.05$). Hence, it was indicated that there was a strong significant relationship between gender with Facebook addiction at 5% level of significance. Likewise, response to the age of the respondent, academic year, frequency of Facebook access, duration of using Facebook per day, sleeping status, relationship status, mental stress, self-esteem and depression status are also a significant predictor with Facebook addiction at 5% level of significance.

Table-2: Result of Binary Logistic Regression Analysis

Parameter	β	S.E.	Wald	df	Sig.	Exp (β)	95% C.I. for Exp (β)	
							Lower	Upper
Gender of the respondent								
Male®						1		
Female	0.855	0.397	4.633	1	0.031	2.352	1.080	5.126
Age of the respondents								
19-21®						1		
21-23	0.274	0.970	0.080	1	0.778	1.315	0.196	8.807
23-25	-0.163	0.980	0.028	1	0.868	0.850	0.124	5.804
25-27	-1.337	0.953	1.968	1	0.161	0.263	0.041	1.701
Academic year								
1st year®						1		
2nd year	0.193	0.921	0.044	1	0.834	1.213	0.200	7.369
3rd year	0.005	0.961	0.000	1	0.996	1.005	0.153	6.610
4th year	-0.602	0.910	0.438	1	0.508	0.548	0.092	3.257
Masters	-2.160	1.085	3.958	1	0.047	0.115	0.014	0.968
Academic performance (CGPA) of the respondents								
Low CGPA®						1		
Medium CGPA	-0.204	0.848	0.058	1	0.810	0.815	0.155	4.299
High CGPA	-0.454	0.805	0.317	1	0.573	0.635	0.131	3.079
Living place of the respondents								
Residential®						1		
Non-residential	0.780	0.418	3.479	1	0.062	2.182	0.961	4.955
Living alone of the respondents								
Yes®						1		
No	-3.115	0.480	42.140	1	0.000	0.044	0.017	0.114
Sleeping status								

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Normal®						1		
Less than normal	0.288	0.858	0.113	1	0.737	1.334	0.248	7.161
More than normal	-2.213	0.884	6.272	1	0.012	0.109	0.019	0.618
Relationship status								
Single®						1		
Married	0.697	0.475	2.156	1	0.142	2.008	0.792	5.092
Engaged	1.616	0.888	3.313	1	0.069	5.034	0.883	28.692
Relationship	0.283	0.790	0.129	1	0.720	1.328	0.283	6.240
Frequency of Facebook access								
Once a week®						1		
Twice/thrice days a week	0.900	0.996	0.816	1	0.366	2.459	0.349	17.317
$4^{th}/5^{th}$ days a week	1.281	0.647	3.922	1	0.048	3.599	1.013	12.779
Daily	2.243	1.306	2.948	1	0.086	9.422	0.728	121.935
Durations of using Facebook per day								
< 30 Minutes®						1		
30 min.-1 hours	1.017	0.541	3.539	1	0.060	2.765	0.958	7.976
1-3 hours	1.100	0.571	3.710	1	0.054	3.003	0.981	9.196
3-5 hours	1.440	1.081	1.773	1	0.183	4.219	0.507	35.118
More than 5 hours	1.558	1.155	1.820	1	0.177	4.748	0.494	45.650
Spending time mostly on Facebook								
Newsfeed						1		
Chatting	1.275	0.934	1.862	1	0.172	3.579	0.573	22.341
Mental stress								
Yes®						1		
No	-0.174	0.397	0.192	1	0.661	0.840	0.385	1.831
Self-esteem status of the respondents								
Low®						1		
Normal	-0.326	0.823	0.157	1	0.692	0.722	0.144	3.261
High	-0.718	0.794	0.817	1	0.366	0.488	0.103	2.314
Feeling depressed while operating Facebook								
Minimal ®						1		
Mild	1.183	1.075	1.212	1	0.271	3.264	0.397	26.828
Moderate	1.398	1.111	1.581	1	0.209	4.045	0.458	35.724
Moderately severe	1.627	1.171	1.929	1	0.165	5.089	0.512	50.552
Severe	2.582	1.320	3.824	1	0.051	13.225	0.994	175.942
Constant	-0.865	1.766	0.240	1	0.624	0.421		

[Here ® indicate reference category]

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From Table 2, Binary logistic regression analysis has been carried out as multivariate techniques to assess the net effect of independent variables on Facebook addiction among university students in Bangladesh. The model contained fourteen independent variables (respondent's gender, age, academic year, academic performance(CGPA), living place of the respondents, living alone of the respondents, sleeping status of the respondents, relationship status of the respondents, frequency of Facebook access, duration of using Facebook per day, spending time mostly on Facebook, mental stress life event, self-esteem and depression status of the respondents) all have a significant effect on Facebook addiction status. On the contrary, religion, faculty of the respondents, academic performance (CGPA), permanent residence, family type of the respondents, income of the respondent's family, smoking status and physical comorbidities of the respondents are all insignificant effects on Facebook addiction status.

The odds ratio indicating that the females are 2.352 times more likely to Facebook addicted than the students are male. The odds ratios of age group 21-23 and 23-25 are 1.315 and 0.850 times more and less likely to have Facebook addiction respectively than the age of 19-21 years of students. However, educational level was found to be a significant factor among the Facebook addiction, Odds ratio for 2nd and 3rd year are 1.213 and 1.005 times more likely to have Facebook addiction respectively than 1st year (reference category). Multivariate analysis results show that the odds ratio of medium CGPA is 0.815 times less likely to have Facebook addicted than comparing to acquiring low CGPA's students which is reliable to other studies. Non-residential students' odds ratio 2.182 times more likely to Facebook addicted than residential students (reference category). The odds ratio for living alone is 0.044 times less likely to Facebook addiction than the reference category whereas living alone of the respondents was a significant factor among Facebook addiction. Concerning respondents sleeping status, who sleeps less than normal their odds ratio 1.334 times more likely to Facebook addicted than compared to periods of sleep at normal (6-7 hours) as a reference category. Multivariate analysis also demonstrates that the odds ratio of relationship status is married 2.008 times more likely to have Facebook addiction than single (having no boyfriend or girlfriend), who have engaged their odds ratio 5.034 times more likely Facebook addict than married and the odds ratio of relationship status is joining with a partner (having boyfriend or girlfriend) that 1.328 times more likely to Facebook addiction than comparing to reference category. Here who access their Facebook account daily their odds ratio 9.422 times more likely Facebook addicted than compare to other frequency of Facebook access once a week. Here, who spend their time 3 to 5 hours on Facebook their odd ratio 4.219 times more likely to Facebook addicted than compare to less than 30 minutes using Facebook per day. Also, it notifies that who use Facebook more than 5 hours their odd ratio 4.748 times more likely to Facebook addicted than compare to using Facebook less than 30 minutes per day. This result is like the other study [21]. Apparently, who spend excessive time in Facebook is for chatting purposes their odd ratio 3.579 times more likely to have Facebook addicted than compare to Newsfeed. Here, who don't have mental stress their odds ratio 0.840 times less likely to have Facebook addiction than compare to have mental stress.

Utterly, Multivariate analysis also demonstrates that the odds ratio of the strongest predictor of reporting normal self-esteem is 0.722 times less likely to Facebook addicted than compare to low self-esteem which is like the other study [23]- [24]. The study findings also show that who have suffered severe depression their odds ratio 13.225 times mostly likely to have Facebook addicted than compare to minimal depression which are consistent with [25].

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Discussion

The study aims to determine the level of acceptance towards Facebook addiction and identify the factors influencing the relationships of self-esteem and depression of university students in Bangladesh. Study findings reveal that Facebook addiction has a positive effect with depression and self-esteem among university students in Bangladesh. In this study we have discovered that 52% of students are Facebook addicted. Respondents who are female are 2.352 times more likely to Facebook addiction than compare to male students.

We also noticed that majority (75%) of the students are Facebook addicted who spend their time more than 5 hours averagely which is consistent with [26]. They found that students who frequently used Facebook for social interaction reported higher levels of addiction.

The findings of the study showed that the effect of Facebook addiction with self-esteem and depression on students' academic performance. Multivariate analysis shows that those who acquiring medium CGPA are 0.815 times less likely to Facebook addicted than compare to who acquiring low CGPA. Moreover, the study results support the argument that self-esteem can serve as a buffer against the development of Facebook addiction behavior among students [23], [27]. Malaysian students who have a high level of self-esteem are reported to have high academic achievement which is consistent within these study findings. Besides, Zeigler-Hill et al. (2013) found that unstable self-esteem was associated with poor academic performance for university students [28]. Therefore, the findings from this study clearly show that self-esteem is a critical factor for both Facebook addiction and students' academic performance.

Self-esteem plays a potential role in the addictive behavior towards Facebook [23]- [24]. Among them, 61.1% of students are Facebook addicted who suffered low self-esteem. Moreover, multivariate result exhibits that the who have normal self-esteem, indicating odds ratio 0.722 times less likely to Facebook addicted than who have low self-esteem. The analysis expresses that those who have low self-esteem are more addicted to Facebook). The study demonstrates that enrolled among the Facebook addicted students about highest 70.6% students are suffered severe depression respectively and recording their odds ratio 13.225 times more likely to Facebook addicted than compare to who have belongs to minimal depression category. Previous studies outside of Bangladesh have reported associations between FA and depression which is consistent with [26], [29] - [31], [22]. Problematic Facebook use appears to have detrimental effects on mental health. Hence it declares that when the depression category was increased by step to step, they were frequently more Facebook addicted.

Conclusions

Facebook are the most generally utilized stage on the web and it is turning out to be quickly the most significant communication and collaboration apparatus. Facebook may survive the social relationship because the virtual connection may facilitate the social interactions of the subject through the efficient dissemination of information to the desired audience. This study examined the relationship between Facebook addiction, self-esteem, depression, and academic performance. The results show negative effect of Facebook addiction on academic performance. The results also showed the Facebook frequency of use has significant effect on Facebook addiction as well as the relationship status has the strongest relationship with Facebook addiction.

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Findings exhibit that self-esteem and depression has a significant effect of Facebook addiction and is enrolled having severe depression and low self-esteem they are frequently more addicted to Facebook. The findings of the research model contribute to a better understanding of this addictive behavior among students. Here are some recommendations that will be helpful who are addicted to Facebook.

University management staffs arrange campaigns must be held to raise awareness in students regarding the negative repercussions of social networking sites.

Keep in touch with your friends and family and spending quality time to go out for movies, excursion, make plans get together.

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