

Impact of Problematic Social Media Use on Psycho-Social Aspects of University Students in Bangladesh

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Abstract: *The present study focuses on the effects of problematic social media use on depression, anxiety, and negative consequences of various social aspects of university students in Bangladesh. The purpose of this study is to know whether university students, who are more prone to problematic social media use, are more likely to experience depression, anxiety, and negative consequences in different social aspects. And to do so an online survey on 107 both Honours and Masters has been conducted among the university-going students who belong to the age group of 18 to 27 years. The results (of Pearson's r) show that problematic social media use among university students has a statistically moderate positive association with depression, anxiety, and negative consequences on various social aspects ($r = .49, .54, \& .44$ respectively). Furthermore, the results of multivariate regression analyses also demonstrate the significant impact of problematic social media use on depression, anxiety, and negative consequences on various social aspects ($Beta = 0.431, 0.460, \& 0.390$ respectively).*

Keywords: Anxiety, Bangladesh, Depression, Social aspects, Social media

1. Introduction

In this modern period, the fastest and most convenient ways to get information are undoubtedly different platforms of social media with the help of various technological devices via an internet connection. Social media is now being used by individuals or groups from all walks of life. There are numerous social media platforms that include but are not limited to Facebook, Messenger, Twitter, Instagram, Pinterest, YouTube, LinkedIn, and Google+ (as cited in Islam & Sikder, 2020). At present, students depend more on social media and the internet for information and data. Problematic social media use means indiscriminate usage of social media which consumes much of one's time and energy. As a result, problematic social media use creates addiction which in turn increases their depression, anxiety, and deteriorates their overall mental wellbeing (as cited in Islam & Sikder, 2020). As students spend more time on social media, they do not get sufficient time to communicate physically with other people and socialize meaningfully with surrounding people. A study's findings confirm that excessive use of social media causes nervousness, stress, and anguish among students when they deprived of themselves from doing fruitful works, social activities and spending quality time in family life (as cited in Islam & Sikder, 2020). As a result, problematic social media use appears to have detrimental negative effects on social activities and the mental health of

university students. The findings of another study also demonstrated that problematic smartphone use and problematic social media use were linked to poor psychological well-being (i.e. anxiety and depression) during COVID-19 pandemic in Bangladesh (Islam et al., 2021).

2. Statement of the Problem

There has been a growing concern over the past couple of decades regarding social media usage among students, and its impact on their psychological and social aspects. Social media addiction is known as a sort of internet addiction (as cited in Sahin, 2018). People/students who spend more time on social media have an intention to be known of any events instantly, which may cause virtual tolerance, virtual communication and virtual problems. Behaviors that force the person into these actions can be termed as social media addiction (Sahin, 2018).

However, university students of Bangladesh are right now, especially during COVID-19 pandemic, using more internet and spending more time on social media. Various types of social media use are prevalent among university students because of the availability of smartphones with internet connection. Today's younger generation is hooked on social media, and this media has been putting increased pressure on university students of different levels. Formerly, communication and free sharing of thoughts between them were limited due to distances, but now people can communicate in the blink of an eye because of the blessings of the internet. Oberiri and Greg (2017) observed that the most utilized social networking site was Facebook, but only very few students use the sites for academic purposes. Since students use social media frequently, many of them sometimes receive unwanted comments, pictures, and videos which put pressure on the psychological aspects of students. Therefore, although social media was created to keep the people of the global world more connected, unfortunately, it has become the fourth meal of the day for the younger generations. As a result, excessive or problematic social media use has emerged as psychological and social problems among students, especially university students in Bangladesh.

3. Objective of the Study

The objective of the present study is to know the impact of the problematic use of social media on the psycho-social aspects of university students.

4. Hypotheses

This research seeks to test the following hypotheses:

H1: Students who are habituated to use social media in a problematic way are more likely to have their depression level increased.

H2: Students who are accustomed to using social media in a problematic way are more likely to have their anxiety level increased.

H3: Students who are habituated to using social media in a problematic way are more likely to experience negative consequences regarding various social aspects.

5. Rationale of the Study

The modern world is witnessing the massive use of social media due to the diffusion of communication technologies. As a result, the cost of smartphone set and internet use have decreased substantially. Since access has been easier than earlier, almost all the students of universities and other people are now using social media with the help of smartphone or different types of computers with internet connections. The data of Internet World Stats (2020) show that as of March 2020, 60.7 percent of the population in Bangladesh is now using the internet at any capacity compared to 31.9 percent in 2015.

During the COVID-19 pandemic, all educational institutions were closed for around one and a half years in Bangladesh and students were almost confined to their homes or apartments. As a result, most of university students spend longer period of time on social media and hence it provides many university students with ample opportunity to use Facebook through which he or she comes across many news feed and different types of negative contents, and whereby they experience different types of depression, anxiety and some sorts of social problems. Therefore, the present study finds the logic to investigate whether university students who are habituated to problematic social media usage are more likely to experience depression, anxiety, and different types of social problems.

6. Review of Related Literature

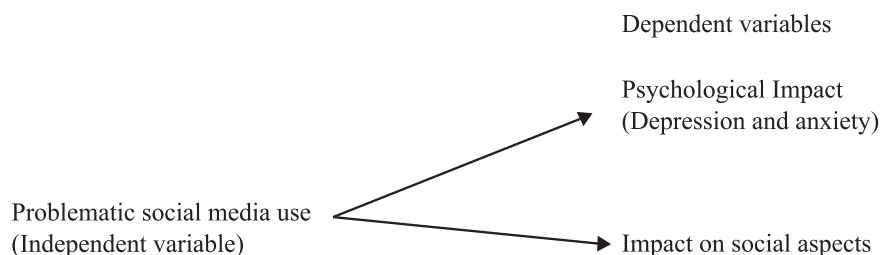
Although many researchers have been studying the prevalence, and psycho-social impact of social media on school students over the last two decades, little attention, however, has been paid to studying the impact of the usage of social media on psychological as well as social aspects of university students. Oberst et al. (2017) demonstrated that online networking affects, particularly youngsters' psychological wellness. They, moreover, showed that the overuse of the internet in aspects of young people's lives poses emotional stress on them. Islam et al. (2021) found in a study that problematic social media use was positively related to irregular physical exercise, poor engagement with education-related works, social media use, watching television, ignoring earning activities, anxiety, and depression. Barrense-Dias, et al. (2019, as cited in Deepa & Priya, 2020) showed that social media is the most exceedingly terrible stage for youth where the younger's use for cyberbullying and trolling which is a hazard to youngsters' mental health. Likewise, Pater & Mynatt (2017) explain that social media causes hostile and unsafe conduct in this manner it is harmful to the emotional well-being of a person, particularly for youngsters. Parmar (2017) opined that, in the 21st century, the youth have been investing their energy in various social contraptions, a normal 12-15 hours per day on stimulation media, including, telephones, mobile phones, personal computers, workstations, televisions, just as some others devices. With the assistance of these devices, the students use WhatsApp, YouTube, Facebook, Instagram, Twitter and some other social media. Thornicroft et al. (2016) explored that online networking is significant for youngsters' lives since it has an incredible capability to connect people and groups whereby puts emotional stress. Excessive social media use poses some potential hazards for human's

psychological wellness. However, the youth sometimes utilize social networking sites for digital harassment, similar to ridiculing others, mimics, and so on. As a result, some people lose their confidence in using these types of social media. Oberiri and Greg (2017) also observed that the most utilized social networking site was Facebook and only very few students use the sites for academic purposes whereas the most encountered problems are receiving unwanted comments, pictures, and videos. Sarker and Shahid (2018) find that 47.62 percent of students opine that a student might be mentally upset because of being a victim of different types of crimes that occurred on Facebook.

7. Research Gap

There is plenty of research done on the impact of social media on psycho-social aspects of students globally, but there are very few studies on the impact of social media on psycho-social aspects among public university students in Bangladesh. Therefore, the present study will contribute to filling this gap and enrich the research domain in the context of Bangladesh.

8. Conceptual Model



9. Methodology

9.1 Research design and method: The method of doing this study was an online survey. The data were collected with the help of a self-administered questionnaire. The researchers conducted this survey in 2021 among 107 students of Bangladesh University of Professionals who are studying in both Honours and Masters programs. The sample (N=107) of this study was selected based on convenience sampling as the researchers collected primary data from a conveniently available pool of respondents of this university. The researchers sent self-administered questionnaires to many students electronically and sent request emails as well to fill up the questionnaire and get it back to us. Eventually, the responses ended up at 107. It might be the fact that as students were doing coursework and attending exams online during the COVID-19 pandemic; many students did not pay attention to our appeal. Moreover, since many students lost their earning sources i.e. tuition or any other type of temporary income, they were mentally disturbed and did not find any interest in filling up our questionnaire. However, more than a hundred sample is considered a large sample size statistically, but it would be better if we could increase our sample size a bit. However, respondents participated in the survey at their convenient time and day depending on their will. Actually, the researchers

relied on online survey as well as convenience sampling to accomplish this study as COVID-19 situation was worse at that time and the university was closed for an indefinite period. Furthermore, to accomplish this study, the researchers also collected necessary information from different sources of secondary data like books, websites, magazines, journals, and articles.

9.2 Measures: Dependent variables

Psychological impacts i.e. depression

This study measures depression and anxiety as psychological impacts due to problematic social media use. However, the present study has used the Patient-Reported Outcomes Measurement Information System (PROMIS) four-item short forms for measuring depression and anxiety (as cited in Shensa et al., 2018). The four-item scale was used to ask participants how frequently over the past seven days they felt hopeless, worthless, helpless, or depressed. These four items were used to create a “Depression index” using exploratory factor analysis. Items were scored using a five-point Likert scale with corresponding responses of Never (1), Rarely (2), Sometimes (3), Often (4), and Always (5). The Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy score is 0.854 and the reliability of these items was confirmed with Cronbach’s Alpha for 0.937. A composite scale was calculated, with raw scores ranging from 4 to 20, and greater scores indicating increased severity of depressive symptoms.

Psychological Impacts i.e. anxiety

The PROMIS anxiety scale (as cited in Shensa et al., 2018) has been correlated with several other commonly used anxiety instruments, such as the Generalized Anxiety Disorder seven-item Scale (GAD-7), the Mood and Anxiety Symptom Questionnaire (MASQ), and the Positive and Negative Affect Schedule (PANAS), providing a source of validity evidence for the measure (as cited in Shensa et al., 2018).

The four-item PROMIS anxiety scale used to ask participants how frequently over the past seven days they experienced the following: “I felt fearful,” “I felt it was hard to focus on anything other than my anxiety,” “My worries over-whelmed me,” and “I felt uneasy.” Response choices were identical to those for the depression scale noted above. These four items were used to create an “Anxiety index” using exploratory factor analysis. The Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy score is 0.820 and the reliability of these items was confirmed with Cronbach’s Alpha for 0.884. A composite scale was calculated, with raw scores ranging from 4 to 20, and greater scores indicating increased severity of anxiety symptoms.

Social Impact Index

The researcher has created an index variable named “Social Impact Index” based on six correlated question items that are related to some social aspects. Items were scored using a five-point Likert scale with corresponding responses of Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), and Strongly Agree (5). The Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy score is 0.809 and the reliability of these items was confirmed with Cronbach’s Alpha for 0.864. A composite

scale was calculated, with raw scores ranging from 5 to 30, and greater scores indicate increased severity of social problems.

Independent variable

Respondents' problematic social media use: The study has used problematic social media use as the main independent variable. However, the present study has adapted Bergen Social Media Addiction Scale (BSMAS) (as cited in Raudsepp & Kais, 2019) to assess participants' problematic social media use (PSMU). It is worth mentioning that BSMAS is a modified version of the previously validated Bergen Facebook Addiction Scale (as cited in Raudsepp & Kais, 2019).

The adapted scale comprised a wording change that replaced “Facebook” with “Social Media” in each item, with social media defined in the scale instructions as “Facebook, Twitter, Instagram etc.” BSMAS has been composed of six-items reflecting the six core addiction elements (as cited in Raudsepp & Kais, 2019). These six items were used to create a “problematic social media use index” using exploratory factor analysis.

Items were scored using a five-point Likert scale with corresponding responses of very rarely (1), rarely (2), sometimes (3), often (4), and very often (5) and kept these as it is and then inserted into the multiple regression model for analysis. The Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy score is 0.767 and the reliability of these items was confirmed with Cronbach's Alpha for 0.748. A composite scale was calculated, with raw scores ranging from 5 to 30, and greater scores indicate increased severity of problematic social media use.

Other independent variables: This study has used some other independent variables as control variables which include: sex, age, educational qualification, monthly family income and parents' living status. These variables have been inserted into multiple regression analyses to see whether these variables have any impact on depression, anxiety and social aspects.

10. Results

Results of univariate analyses

Among the total respondents of the study, about 47 percent of respondents belong to the age group of 22 to 23 years while 22.4 percent of the total respondents are in between 20 to 21 years, and only about 22 percent of the respondents belong to the age group of 24 to 25.

Table 1. Percentage distribution of the respondents by demographic information

Sex	Frequency	Percentage (%)
Male	52	48.6
Female	55	51.4
Total	107	100.0
Age Group		
18-19 years	6	5.6
20-21 years	24	22.4
22-23 years	50	46.7
24-25 years	23	21.5
26-27 years	4	3.7
Total	107	100.0
Educational level		
Honors 1st year	9	8.4
Honors 2nd year	14	13.1
Honors 3rd year	21	19.6
Honors 4th year	28	26.2
Masters	35	32.7
Total	107	100.0
Family Income (thousand in tk.)		
Less than 20000	13	12.1
20001 to 35000	23	21.5
35001 to 50000	41	38.3
50001 to 65000	18	16.8
More than 65001	12	11.2
Total	107	100.0
Parents' living status		
Live together i.e. good relation	104	97.2
Separated i.e. bad relation	3	2.8
Total	107	100.0

Source: Survey, 2021

Table 1 also depicts that about 33 percent of the respondents are studying at the Masters level whereas 26.2 percent of the respondents are from honors 4th year. Another 19.6 percent of the respondents are the students of Honour's 3rd year. Honour's 1st year students' participation is minimal (around 8 percent). However, most of the respondents of the present study are female (51.4 percent) whereas the rest of the respondents are male students (48.6 percent).

It is evident from Table 1 that the monthly family income of the respondent is very good. About 38.3 percent of the respondents mention that their family income is between

tk.35001-50000 while only 21.5 percent of respondents' monthly family income is between tk.20001 to 35,000. Besides, 16.8 percent of respondents' family members earn tk.50, 001 to 65,000 whereas only 11 percent of students' monthly family income is more than tk.65,001.

Results of the bivariate analysis

Tables 2, 3, and 4 present the results of the bivariate analysis. Here, the researcher examines the degree and direction of association between problematic social media use and depression, anxiety as well as social aspects of university students.

Table 2. Correlation between problematic social media usage and depression among university students

Correlations			
		Problematic social media use	Depression level
Problematic social media use	Pearson Correlation	1	.488**
	N		106
Depression level	Pearson Correlation		1

**Correlation is significant at the 0.01 level (2-tailed). Source: Survey, 2021

The correlation coefficient in Table 2 shows that the independent variable i.e. problematic social media use is statistically significantly correlated with the dependent variable i.e. depression level. The result of Pearson's r indicates that there is a moderate positive relationship ($r = .49$) between problematic social media use and the depression level of university students. The result is statistically significant at the level of 0.01. And this result supports the present study's hypothesis, which means if problematic social media use increases; the level of depression among university students moderately goes up.

Table 3. Correlation between problematic social media usage and anxiety among university students

Correlations			
		Problematic social media use	Anxiety level
Problematic social media use	Pearson Correlation	1	.543**
	N		106
Anxiety level	Pearson Correlation		1

**Correlation is significant at the 0.01 level (2-tailed). Source: Survey, 2021

The correlation coefficient in Table 3 shows that the independent variable i.e. problematic social media use is statistically significantly associated with the dependent variable i.e. anxiety level. The result of Pearson's r demonstrates that there is a strong

positive relationship ($r = .54$) between problematic social media use and the anxiety level of university students. The result is statistically significant at the level of 0.01. And this result also supports the present paper’s hypothesis, which means if problematic social media use increases; the level of anxiety among university students also strongly increases.

Table 4. Correlation between problematic social media usage and social impact on university students

Correlations			
		Problematic social media use	Social Impact Index
Problematic social media use	Pearson Correlation	1	.440**
	N		105
Social Impact Index	Pearson Correlation		1

**Correlation is significant at the 0.01 level (2-tailed). Source: Survey, 2021

The correlation coefficient Table 4 shows that the independent variable i.e. problematic social media use is statistically significantly correlated with the dependent variable i.e. social aspect. The result of Pearson’s r reveals that there is a moderate positive relationship ($r = .44$) between problematic social media use and social aspects of university students and the result is statistically significant at the level of 0.01. This result supports the present study’s hypothesis, which means if problematic social media use increases; the negative impact on various social aspects of university students also moderately increases.

Results of multivariate analyses

To determine the influence of socio-demographic and problematic social media usage on depression, anxiety as well as social aspects of university students, three multivariate ordinary least square (OLS) regression models were run. Tables 5 through 7 illustrate the beta for three multivariate ordinary least square regression models that indicate whether problematic social media use and other independent variables have an influence on depression, anxiety as well as university students’ social aspects. The variables included in all three ordinary least square regression models are problematic social media use, sex, age, educational qualification, monthly family income and parents' living patterns.

Multivariate regression on problematic social media use and depression

Table 5 shows the results of the ordinary least square regression in which it was checked whether problematic social media use has an impact on depression among university students in Bangladesh. The results of this model were significant at $p < 0.001$, and the

model was a good fit as the R Square is 0.351, and Adjusted R Square is 0.312 which are well above the accepted threshold of R Square and Adjusted R Square 0.20).

Table 5. Net effects of problematic social media use and other predictor variables on the level of depression among university students (Model 1)

Independent variables	Beta
Problematic social media use	0.431***
Sex of the respondents	0.317***
Age of the respondents	-0.024
The education level of the respondents	0.152
Respondent's monthly family income	-0.062
Respondent's parents' living pattern	0.046

n= 107, R Square = 0.351, Adjusted R Square = 0.312 ***significant at $p < 0.001$.

Source: Survey, 2021

The results of multivariate regression confirm that since the R Square is 0.351, it indicates that the six independent variables, all together, account for 35.1 percent of the variance in depression (Adjusted R Square = 0.312). Here, it is found that if one unit increases in problematic social media use, it increases the level of depression among university students by 0.430 and it is statistically significant at the level of 0.001. The equation also shows that female students suffer more from depression by 3.204 (Unstandardized B, statistically significant at 0.001) than male students. However, other independent variables were not statistically significantly related to depression. The result of this model indicates that there is no problem regarding collinearity because the tolerance score is less than 1 while Variance Inflation Factor (VIF) score is less than 2. Moreover, the beta of Table 5 shows that the effect of problematic social media use (beta = 0.431) is the highest in predicting university students' depression level as it is the highest beta among the independent variables, controlling for the effects of the other variables in the equation. This result is statistically significant at 0.001. The beta coefficient tells us how much change is occurred in the dependent variable for every 1-unit change in the independent variable controlling for the effects of the other independent variables in the equation (Walsh, 1990). However, sex does have also an effect (Beta = 0.317) in predicting depression level among university students, controlling for the impacts of the other variables in the equation. This result is also statistically significant at 0.001. The results clearly indicate that problematic social media use influences more (Beta of problematic social media use is 0.431 as compared to the Beta of sex variable 0.317) in increasing depression level among university students than the effect of the sex variable. However, the results of other independent variables were not statistically significant.

Multivariate regression on problematic social media use and anxiety

The results of the multivariate regression equation (Table 6) reveal that since the R Square is 0.412, it clearly indicates that the six independent variables, altogether, account for 41.2 percent of the variance in anxiety (Adjusted R Square = 0.377). The results of this model were significant at $p < 0.001$, and the model was a good fit as the R Square is 0.412, and Adjusted R Square = 0.377 which are well above the accepted threshold of R Square and Adjusted R Square (0.20).

Table 6. Net effects of problematic social media usage and other predictor variables on anxiety level among university students (Model 2)

Independent variables	Beta
Problematic social media use	0.460***
Sex of the respondents	0.262**
Age of the respondents	0.034
The education level of the respondents	0.144
Respondent's monthly family income	0.116
Respondent's parents' living pattern	-0.053

$n = 106$, R Square = 0.412, adjusted R square = 0.377

significant at $p < 0.01$; *significant at $p < 0.001$.

Source: Survey, 2021

Here, it is found that if one unit increases in problematic social media use, it increases the level of anxiety among university students by 0.382 (Unstandardized B = 0.382) and it is statistically significant at the level of 0.001. The result of this model also indicates that there is no problem regarding collinearity because the tolerance score is less than 1 while VIF score is less than 2.

The equation suggests a positive relationship (Unstandardized B = 0.382) between problematic social media use and the level of anxiety among university students keeping all other variables constant. This positive relationship tells us that students who are habituated to problematic social media use tend to suffer more from anxiety (Unstandardized B = 0.382) than their student counterparts who are not habituated to problematic social media use. The equation also shows that female students suffer more from anxiety by 2.202 (Unstandardized B, statistically significant at 0.001) than male students. However, other independent variables were not statistically significantly related to anxiety.

Moreover, the beta of Table 6 shows that the effect of problematic social media use (beta = 0.460) is the highest in predicting university students' anxiety level, controlling for the effects of the other independent variables in the equation. This result is statistically significant at 0.001. However, sex does have also an effect (beta = 0.262) in predicting anxiety level among university students, controlling for the impacts of the other variables

in the equation. This result is also statistically significant at 0.01. The results clearly indicate that problematic social media use influences more (beta of problematic social media use is 0.460 as compared to the beta of sex variable 0.262) in increasing anxiety level among university students than the effect of the sex variable. However, the results of other independent variables were not statistically significant.

Multivariate regression on problematic social media use and social aspects

Table 7 shows the results of the ordinary least square regression in which it was checked whether problematic social media use and other independent variables have a negative impact on various social aspects of university students in Bangladesh. The results of this model were significant at $p < 0.001$, and the model was a good fit as the R Square is 0.279, and Adjusted R Square = 0.234 which are well above the accepted threshold of R Square and Adjusted R Square (0.20).

Table 7. Net effects of problematic social media usage and other predictor variables on social aspects of university students (Model 3)

Independent variables	Beta
Problematic social media use	0.390***
Sex of the respondents	0.263**
Age of the respondents	0.163
Education level of the respondents	-0.001
Respondent's monthly family income	-0.059
Respondent's parents' living pattern	-0.090

$n = 105$, R Square = 0.279, adjusted R square = 0.234

significant at $p < 0.01$; *significant at $p < 0.001$.

Source: Survey, 2021

The results of the multivariate regression equation confirm that since the R Square is 0.279, it clearly indicates that the six independent variables, altogether, account for 27.9 percent of the variance in explaining negative impact on various social aspects (Adjusted R Square = 0.234). Here, it is found that if one unit increases in problematic social media use, the negative impact on different social aspects of university students tends to increase by 0.437 (Unstandardized B = 0.437) and it is statistically significant at the level of 0.001. The result of this model also indicates that there is no problem regarding collinearity because the tolerance score is less than 1 while the VIF score is less than 2.

The equation suggests a positive relationship (Unstandardized B = 0.437) between problematic social media use and the negative impact on various social aspects of university students keeping all other variables constant and this result is statistically significant at the level of 0.001. This positive relationship explains that students who are habituated to problematic social media use tend to suffer more from negative

consequences regarding different social aspects (Unstandardized B = 0.437) than their student counterparts who are not habituated to problematic social media use. The equation also shows that female students suffer more from negative consequences regarding different social aspects by 2.992 (Unstandardized B is 2.992 and it is statistically significant at 0.01) than male students. However, other independent variables did not turn into statistically significant.

Moreover, the beta of Table 7 shows that the effect of problematic social media use (beta = 0.390) is the highest in predicting negative consequences regarding different social aspects as it is the highest beta among the independent variables, controlling for the effects of the other independent variables in the equation. This result is statistically significant at 0.001. However, sex does have also an effect (beta = 0.262) in predicting negative consequences regarding different social aspects, controlling for the impacts of the other variables in the equation. This result is also statistically significant at 0.01. The results clearly indicate that problematic social media use influences more (Beta of problematic social media use is 0.390 as compared to the beta of sex variable 0.263) in increasing negative consequences regarding different social aspects for university students than the effect of the sex variable. However, the results of other independent variables were not statistically significant.

11. Discussion

Problematic social media use and depression: The results of the multivariate regression equation reveal that if any university student is habituated to problematic social media use, he or she suffers more from depression. This result is statistically significant at 0.001. Therefore, the present study's first hypothesis is supported by the data. The first hypothesis states that students who are habituated to use social media in a problematic way are more likely to have their depression level increased. This hypothesis is also supported by the result of bivariate analysis. The result of Pearson's r indicates that there is a moderate positive relationship ($r = .49$) which means that if university students do more problematic social media use; the level of depression among them goes up moderately.

In a similar way, in the United States (US), every year approximately 7 percent and 18 percent of students are affected by depression and anxiety as well as some social problems. Moreover, anxiety and depression are the most common manifestations of psychological problems in the US, depression carries the heaviest burden of disability among psychological and behavioral disorders (Raudsepp & Kais, 2019). Likewise, the study findings of Umar and Idris (2018) depicted that social media usage has a negative influence on psychosocial behaviour and academic performance.

Problematic social media use and anxiety: Moreover, the results of the multivariate regression equation of the second model reveal that students who are habituated to problematic social media use tend to suffer more from anxiety than their student counterparts who are not habituated to problematic social media use. This result supports the second hypothesis of the present study. The second hypothesis proposes that students who are habituated to use social media in a problematic way are more likely to have their

anxiety level increased. This hypothesis is also supported by bivariate results. The bivariate result depicts that there is a strong positive relationship ($r = .54$) between problematic social media use and anxiety level of university students. This positive result indicates that if university students do more problematic social media use; the level of anxiety among university students also goes up. Likewise, Kolhar and his colleagues (2021) showed in their study that social media use can bring negative consequences on mental health that eventually propel to depression as well as anxiety.

Problematic social media use and social aspects: Furthermore, the results of the multivariate regression analysis of model 3 confirm that students who are more habituated to problematic social media use tend to suffer more from negative consequences regarding different social aspects than their student counterparts who are not more habituated to problematic social media use. The multivariate regression result supports the third hypothesis which states that students who are habituated to use social media more in a problematic way are more likely to experience negative consequences regarding various social aspects. The result of bivariate analysis supports this hypothesis also.

The result of bivariate analysis reveals that there is a moderate positive relationship ($r = .44$) between problematic social media use and negative consequences of social aspects for university students. Therefore, this result also supports the present study's last hypothesis. A sort of similar finding was found in Kolhar and his colleagues' (2021) study that most of the respondents reported long-term use of social networking sites for nonacademic purposes. These types of behavioral patterns can distract university students from their academic work, negatively affect their academic achievement, different types of social interactions, and variation of sleep duration, and propel them to a sedentary lifestyle and physical laziness, which in turn can put them in a vulnerable position and contribute to developing non-communicable diseases as well as mental health problems. Similarly, Seo and his associates' (2016) study findings revealed that mobile phone dependency negatively predicted attention and positively predicted depression which eventually affected social interactions with friends and both Korean language arts and mathematics achievement.

However, among the control variables, only the sex variable has statistically been significant for all three models. The results of multivariate analyses reveal that female university students who are more habituated to problematic social media use are more likely to experience depression, anxiety as well as negative consequences regarding various social aspects than their male student counterparts. Other independent variables did not appear as statistically significant.

With regard to measuring the net effects of independent variables on depression, anxiety and negative consequences of different social aspects for university students, problematic social media use has more effect on depression, anxiety and negative consequences of various social aspects for university students than sex variable. Therefore, the findings of the present study confirm that students who are habituated to problematic social media use are more likely to be depressed, anxious and experience many negative consequences in society.

12. Conclusion

The findings of the present study provide us with a clear answer to the research question of whether the students who are habituated to use social media in a problematic way are more likely to have their depression level increased. The study finds a statistically significant moderate positive relationship between problematic social media use and depression. Furthermore, the results of multivariate regression analyses also confirm the positive relationship between problematic social media use and depression as well as anxiety. Therefore, the study findings confirm that university students of Bangladesh who are habituated to using social media in a problematic way are more likely to suffer from depression and anxiety.

Moreover, the findings of the study suggest that students who are more habituated to problematic social media use tend to suffer more from negative consequences regarding different social aspects than their student counterparts who are not more habituated to problematic social media use. These findings are also supported by both the bivariate and multivariate analyses.

The study findings also reveal that, among the control variables, only the sex variable has statistically been significant for all three models. The results of multivariate analyses reveal that female university students who are more habituated to problematic social media use are more likely to experience depression, anxiety as well as negative consequences regarding various social aspects than their male student counterparts. Other independent variables did not appear as statistically significant. However, with regard to measuring net effects, it is evident that problematic social media use has more effect on depression, anxiety and negative consequences of various social aspects for university students than sex variable.

Since all findings are supported by both the bivariate and multivariate analyses, all three hypotheses of the present study are unquestionably supported. As there is a very few studies done on problematic social media use and its impact on depression, anxiety and social aspects among university students in Bangladesh, the findings of the present study help us to know the impact scientifically. And, hence, it is ostensibly clear that our research joins the very sizable existing social media research indicating that university students who are more habituated to problematic social media use are more likely to suffer from depression, and anxiety and face some sort of social problems. Moreover, since the sample size is fairly large enough, we may generalize this result to all university students of Bangladesh. However, as there is very few studies have been done on this topic; further research is suggested to test the reliability of the findings of the present study.

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