



## The Prevalence and Associated Factors of Social Media Addiction Among Undergraduate University Students of Dhaka City

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### Abstract

Social Media usage have been rising within the past few years and one of the common activities for young peoples and adolescents, most of the tome overused/misused, therefore may cause social media addiction. This addiction may influence on students' regular activity, psychology, academic performance and behavior.

The study aims to explore the prevalence of social media addiction among undergraduate university students in Dhaka city and to investigate the factors that lead to this behavior.

A cross sectional study was conducted in selected private and public universities of Dhaka city between February-March, 2020 and data was analyzed through SPSS 23 statistical package software.

Among the participants 42 (11.67%) were normal internet user, 161 (44.72%) participants had mild social networking addiction, 149 (41.39%) had moderate social networking addiction, and only 8 (2.22%) had severe social networking addiction. We have further categorized study participants into two categories, where 203 (56.38%) had no/minimal addiction to social networking and remaining 43.62% had moderate/severe social networking addition. Therefore, we can say the prevalence of moderate/severe social networking addiction is 43.62%.

Among the socio-demographic characteristics, Age of the participants (Chi-square = 7.29; P = 0.007), Gender (Chi-square = 21.78; P < 0.001), BMI category (Chi-square = 10.71; P = 0.005), Academic Year (Chi-square = 10.38; P = 0.016), Number of Family members (Chi-square = 8.41; P = 0.004), Monthly Family Income (Chi-square = 8.12; P = 0.0014), Times Required to reach in the university was found significantly associated with level of social-media addiction.

Among the activity related characteristics, daily sedentary hours (Chi-square = 17.36; P < 0.001), smoking status (Chi-square = 20.2; P < 0.001), and habit of drinking alcohol (Chi-square = 16.5; P < 0.001) was found significantly associated with level of social-media addiction.

Among the personality, family and social issue related characteristics, Personality type (Chi-square = 20.2; P < 0.001), Parents are active in social media (Chi-square = 6.79; P = 0.009) was found significantly associated with level of social-media addiction.

Social networking site is an essential part of modern life but addictive use can cause detrimental effect both on the user and the society. This study identified a high prevalence of social networking addiction and opens a door for future researchers to study and deeply think about this topic.

**Keywords:** Bangladesh; World Health Organization; Human Resource

## Abbreviations

AOR: Adjusted Odds Ratios; BDHS: Bangladesh Demographic and Health Survey; CI: Confidence Interval; Icdrr;b: International Center for Diarrhoeal Disease Research, Bangladesh; IQR: Interquartile Range; LMICs: Low- and Middle-Income Countries; MDGs: Millennium Development Goals; UNICEF: United Nations Children's Fund; SES: Socioeconomic Status; WHO: World Health Organization; HR: Human Resource; HRD: Human Resource Development; IDA: International Development Association

## Introduction

In recent years, significant changes have taken place around the world regarding the quantitative and qualitative expansion of internet, social networks and number of people who use them. Access to the Internet is increasingly easy due to advances in mobile technology and the prevalence of smartphones. Social networks include websites and applications that allow users to share content, ideas, opinions, beliefs, feelings, and personal, social, and educational experiences. They also allow communication between a wide range of users at global level [1,2].

Instagram, Telegram, Facebook, Twitter, Skype, and WhatsApp are among the most mainstream and normally utilized virtual interpersonal organizations [3-8]. Right now (2018), the quantity of web clients on the planet is about 4.021 billion and furthermore 3.196 billion individuals utilize informal communities all the time overall [9].

Informal communities assume a urgent job in learning conditions as a key communicational channel and a wellspring of social help [11]. As most of students nowadays have been equipped with a laptop or tablet, or at least with a Smartphone before them, they tend to use it to access social networking sites especially Facebook whenever they like. Students might abuse it during classes or lab instead of use it for learning purposes. Numerous long-range interpersonal communication sites are explicitly intended for learning [12]. Interpersonal organizations have numerous favorable circumstances in learning as they give wide access to data and data assets, decrease boundaries to aggregate communication and broadcast communications [13], bolster collective learning exercises [14], urge students to get familiar with self-learning [15], increment commitment and student's inspiration [16], improve commitment of students with one another and their educators [17] and bolster dynamic and social learning [15].

By and large, the development of new innovations, for example, web and interpersonal organizations, notwithstanding giving open doors in encouraging and improving the nature of worldwide correspondences, has made a few dangers [18]. At the point when the utilization of informal communities is overseen ineffectively, they can have negative outcomes at the individual and social levels. Long range interpersonal communication dependence is one of the results that numerous informal organization clients may encounter [19]. Hence, the broad utilization of interpersonal organizations is another type of delicate fixation [20]. People engaged on these websites for various reasons among others to create a personal profile, interact with real-life friends, maintain relationships and share interest.

There are a wide range of hypotheses about the dependence on web and informal communities. The most significant speculations incorporate powerful brain science hypothesis, social control hypothesis, conduct clarification, biomedical clarification, and psychological clarification. As indicated by powerful brain research hypothesis, the foundations of long-range informal communication compulsion are in the mental stuns or passionate lacks in adolescence, character qualities, and psychosocial status.

As per the social control hypothesis, since habit differs as far as age, sex, monetary status, and nationality, particular kinds of compulsion are bound to be found in specific gatherings of society than in different gatherings [21]. The hypothesis of conduct clarification accepts that, an individual uses informal communities for remunerations, for example, getting away from the real world and diversion. In light of the biomedical clarification hypothesis, the nearness of certain chromosomes or hormones, or the absence of specific synthetic compounds that manage cerebrum action, are viable in compulsion [22,23]. As per the intellectual clarification hypothesis, long range interpersonal communication compulsion is because of broken comprehension, and individuals will in general utilize informal organizations to escape from inside and outer issues [24]. When all is said in done, dependence on long range informal communication is delegated a type of digital relationship habit [25].

Long range informal communication habit alludes to mental worry over the utilization of interpersonal organizations and the distribution of time to these systems in such manner that, it

influences other social exercises of people, for example, word related and proficient exercises, relational connections and wellbeing [19] prompting interruption of their life [20]. Person to person communication negatively affects physical and mental wellbeing and causes conduct issue [26], sadness [27,28], tension and craziness [28]. Right now, of an examination on German understudies (2017) demonstrated a positive connection between dependence on Facebook, with narcissism character, melancholy, tension and stress [29]. It is accepted that dependence on long range informal communication is higher in individuals with nervousness, stress, despondency and low confidence [4]. Griffith (2005) proposes that addictive conduct is a conduct that has certain attributes, for example, striking nature, state of mind alteration, resilience, withdrawal indications, struggle, and backslide [30]. Addictive conduct alludes to rehashed propensities that expansion the danger of a sickness or social issues in an individual. Over the previous decade, addictive practices, for example, abuse of web or informal organizations, have become a piece of regular daily existence of understudies. Long range interpersonal communication fixation incorporates the attributes, for example, overlooking the genuine issues of life, dismissing oneself, emotional episode, hiding addictive practices, and having mental concerns [4].

Right now, and side effects of dependence on long range interpersonal communication can incorporate encountering unsettling influences in everyday work and exercises, going through over one hour daily on informal organizations, being knick-knacks to see the old companions' profiles, disregarding work and day by day exercises because of the utilization of informal communities, and feeling on edge and worried because of the absence of access to informal organizations [31].

Evidence suggests that many factors are associated with addiction to internet and social networks. Among these factors are online shopping, dating, gaming and entertainment, using mobile phones for access to internet, searching for pornographic images, user personality trails, and low self-esteem [19,30,32-34]. Students are one of the most important users of the virtual world and social networks. The overuse of social networks has positive and negative academic, social, and health consequences for the students [35].

### Justification of the study

According to 2018 BTRC data, there are 91.34 million internet subscribers in Bangladesh out of them 85.55 million users are

using internet by 3g/4g mobile internet data, around 5.7 million through broadband ISP provider and rest are using others [27]. As most of students nowadays have been equipped with a laptop or tablet, or at least with a Smartphone before them, they tend to use it to access social networking sites especially Facebook whenever they like. Students might abuse it during classes or lab instead of use it for learning purposes. The availability of the Internet and flexibility of schedules make students more vulnerable to develop SNS addiction.

From a study done in Bangladesh in January 2019 Suggest that around 34 million users are actively using social media sites, and according to study, 32 million users are using them on mobile devices [28]. Bangladesh has achieved tremendous progress in the digital sector. With that, the speed of the internet has increased and prices have been relatively low. Besides, mobile devices, especially smartphones, have become less expensive. Due to easy availability smartphones, cheap mobile data and presence of anytime Wi-Fi and free social media apps more users are increasingly leaning towards using them and gradually becoming addicted to them [29]. Several studies previously carried out has found that undergraduate students experienced a few consequences as a result of using excessive social media use including losing sleep, feeling closer to online friend than those seen daily, feel stress as well as feeling addicted to it.

Considering all of these issues, Dhaka would be the most suitable place in Bangladesh to study about social media addiction. Besides very little studies have been carried out on this topic. That's why this study aims to determine the prevalence and associated factors of social media addiction among undergraduate university students of Dhaka city.

### Operational definitions

- **Cross- sectional study:** It is the observational investigation that includes information assortment from populace or agent at one point in time.
- **Prevalence:** Prevalence is the absolute number of instances of an illness present in a populace at a particular time.
- **Social media/Social networking sites (SNS):** It is an electronic online stage that permits clients to make an open profile, to construct social relations with others who share comparable individual, vocation, interests or exercises, to

share thoughts, advanced photographs and recordings, posts, and to educate others about on the web or true exercises and occasions with individuals in their system.

- **Smartphones:** A savvy cell phone that performs a considerable lot of the fundamental elements of a PC, commonly having a touchscreen interface, Internet get to, and a working framework equipped for running downloaded applications.
- **Application (APP):** A kind of use program intended to run on a particular gadget like cell phones, tablet or PC that perform explicit undertakings for which it is created.

### Research question

What is the prevalence and associated factors of social media addiction among undergraduate university students of Dhaka city?

### Literature Review

The definition of Social Networking addiction can be drawn from the definition of Internet addiction itself. Internet addiction can be defined as “excessive Internet over-use which disrupts a person’s sleep pattern, work productivity, daily routines and social life (Young, 1996). According to Kuss and Griffiths (2011), social networking sites addiction falls under one type of Internet addiction called cyber-relationship addiction. This „SNS Addiction Disorder“ consists similar criteria of Internet addiction for instance neglect of personal life, mental pre-occupation, escapism, mood modifying experiences, tolerance, and concealing the addictive behavior.

Several studies have reported the prevalence of SNS addiction among students in China and USA. Pempek, *et al.* (2009) in their study conducted for college students in the USA found that students use Facebook approximately 30 min throughout the day as part of their daily routine. Most of them spent more time observing content on Facebook than actually posting. In another study by Thompson and Loughleed (2012), it has been reported that undergraduate students engaged in social networking sites and Facebook for 117 minutes (almost 2 hours) and 106 minutes respectively. This shows an exponential rise of student’s spending time on SNS. Furthermore, Huang (2011) in his study conducted among adolescents in China discovered that 15.6% of respondents were classified as social media addicts.

There are many possible predictors of SNS addiction exists in the literature review. However, for the present study, only social

supports and peer influences will be investigated against SNS addiction. Despite the many potential benefits offered by Social Networking, studies have been conducted to investigate the impacts of it to personal and social life. There are growing concerns of personal privacy issues, cybercriminal, online harassment, work performance and addiction related to social networking behavior (Das and Sahoo, 2011; Sengupta and Chauduri, 2011; Weir, *et al.* 2011). Some studies have been conducted specifically to find the effects of social networking sites to student academic performance. Paul, *et al.* (2012) in their study revealed that there is a negative relationship between time spent by students on social networking sites and their academic performance. Another study carried out by Thompson and Loughleed (2012) has found that undergraduate students experienced a few consequences as a result of browsing Facebook including losing sleep, feeling closer to Facebook friend than those seen daily, feel stress as well as feeling addicted to it.

Nowadays Facebook has become our daily communication and entertainment media. But it is also not without negative sides. Facebook addiction has bad impact on human efficiency. One study done among medical students of College of Medicine Babylon University in 2015 found that 13% of the students are Facebook addicted, most of them spent around 3 to 4 hours daily on Facebook. Majority of them are very young age and all of this causes very poor academic performance [30]. A study conducted on 170 medical students in one Saudi Arabia Medical College found that excessive use of social media sites like fb causes poor quality sleep. SNS addicted 72.9% of this study participants experienced poor quality sleep during the week study conducted and about 63.5% Participant students experienced poor sleep quality during the weekend [31]. Study suggests that, excessive Facebook usage is much higher in Thailand than many other countries. In one study done on 972 high school Thai students reported that, the prevalence of Facebook addiction is around 41.8% and the risk increases with every one hour increase in usage [32].

Different study suggests that Bangladesh is among the top Facebook using country in the world. One Study done in the University of Dhaka Bangladesh found that the prevalence of Facebook addiction among university student is 39.7%. The study also found that Facebook addiction was associated with less physical activities, poor sleep quality and depression symptoms.

This study concludes that depression from any cause is the key cause for excessive Facebook usage [33].

There are five ways to evaluate human personality traits: Extraversion- a personality where one wants to be surrounded by people and try to become the centre of attention, Agreeableness- here the person is friendly, optimistic and sympathetic, Conscientiousness- one who always wants to be organised, whose personality includes good sense and farsightedness, Neuroticism- depressed, frustrated, moody and lonely personality, Openness to experience- a creative personality [34]. Extroverts use social media for improving his social life and for social upgradation, where introverts use social media to express their frustration while doing this both personalities excessively use social media [35]. Study conducted on 755 Italian participants to find the relationship between personality traits and Facebook addiction found that Facebook addiction is significantly associated with Extraversion- because extrovert personality likes to stay around the people and wants to be the center of attention and Neuroticism- a nervous and depressive personality, and negatively associated with Conscientiousness- a well-organized and good judgmental personality [36].

A research study done in Germany of 398 Facebook users, found that FAD is positively associated with flow experience. As per the definition of Csikszentmihalyi, "flow experience is the condition where individuals are so engaged in a task that every other thing feels useless; the journey is so pleasurable that people keep doing it knowing that great risk is involved in it". FAD has been found to be positively linked to, personality traits such as, narcissism, neuroticism, extraversion, and to male gender as well as mental health conditions like stress symptoms that is anxiety, depression, sleep problems like insomnia, late bedtime and wakeup time [37].

Social networking has been designed such a way for people to maintain their social relationship virtually. People have been using it to communicate with their acquaintance through many ways such as information posted in personal profiles, shared pictures or current status, posted comments on someone's else wall, sent a message through Inbox and online chatting. Pempek, *et al.* (2009) studied why do students use Facebook and their results show it is one way for students to facilitate existing social relationship rather than making a new one. Similar result has been reported

from Smahel, *et al.* (2012) study. Their investigation uncovered that being focused toward having increasingly online companions, inclining toward online correspondence and investing more energy online were identified with expanded danger of Internet compulsion.

Another indicator that has been seen as related with SNS enslavement is peer impacts.

Individuals will in general take part in certain conduct because of impact from nearest individuals or when they saw the conduct is acknowledged in their gathering standard. Drawing from the all-inclusive adaptation of the hypothesis of arranged conduct (TPB), Baker and White (2010) in their investigation found that mentalities, social control and gathering standard were upheld in anticipating expectations to utilize SNS much of the time. Comparative outcome has been accounted for by Barker (2009) which aggregate confidence and gathering distinguishing proof decidedly connected with peer bunch correspondence through SNS.

A nationally representative study among US young adults on the problematic social media use found PSMU is associated with around 9% increase of depressive symptoms [38]. A study among young people in Turkey suggests that daily visits to SNS increase the addiction rate [39]. Study among university students in Kuwait stated that SNS is negatively associated with academic performance [40]. Most of the young adults use social networking site due to the direct influence of their friends. Excessive use of social networking sites hampered the real-life social gatherings, affect work schedule or professional life [41].

Social anxiety and fear of missing out can be a good reason for excessive social media site use [42]. Young generation thinks that, they may become isolated from their friends and family if they do not regularly use social site/applications or do chatting. Young adults are constantly searching for a platform where they can share or express their feelings to their close one and friends. Thus, youth unwittingly becoming addicted to social media sites [43].

The constant depression, communication inefficiency, frustration of their own future, the problems of the country all these leading young generations to use more SNS [39].

## Research Methodology

### Study objectives

#### General objective

To determine the prevalence and associated factors of social media addiction among undergraduate university students of Dhaka city.

#### Specific objectives

- To describe the socio-demographic status of undergraduate university students of Dhaka city.
- To determine the social media addiction status of undergraduate university students of Dhaka city.
- To find out the socio-demographic factors associated with social media addiction among undergraduate university students.
- To find the Personal, familial and Social issues associated with social media addiction.
- To determine habit and activity related factors associated with social media addiction.
- To identify Social media related factors associated with social media addiction.

### Conceptual framework

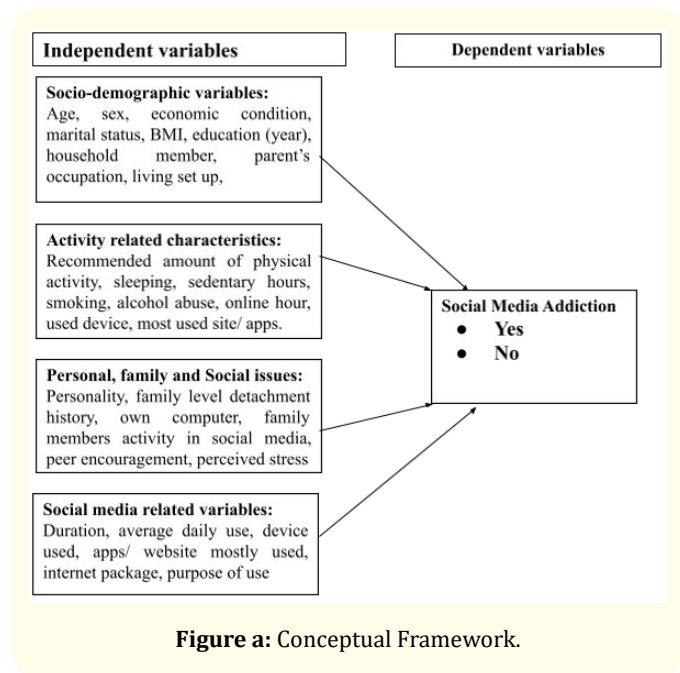


Figure a: Conceptual Framework.

Bergen Social Media Addiction Scale (BSMAS) was used to determine the social media addiction.

#### Study design

The study was an analytical type of cross-sectional study.

Bergen Social Media Addiction Scale (BSMAS) was used to determine the social media addiction. BSMAS was designed by Andreassen, *et al.* (2012) at the University of Bergen [41]. BSMAS consists of 18 questions and 6 items, in a way that, each item has 3 questions. The items include; salience [1-3], tolerance [4-6], mood modification [7-9], withdrawal [10-12], relapse [13-15] and conflict [16-18].

Salience refers to our thinking and behavior in using social networks. It means that, the addictive use of social networks is manifested in the form of individual's dependency on social networks.

Tolerance (craving) represents a gradual increase in the use of social networks to gain pleasure. Mood modification represents modifying and improving behavior or mood. In other words, this component suggests that some users use social networks to get rid of unpleasant feelings. Withdrawal is an unpleasant feeling that a person experiences when disconnected from social networks or discovers he or she is forbidden to use social network. Relapse is a failed attempt of a person to control his/her social networking usage. Conflict represents issues that cause tensions in relationships with others, workplace, education, etc.

The questions in this scale are in 5-point Likert scale, including very rarely [1], rarely [2], sometimes [3], often [4] and very often [5], which are scored from 1 to 5, respectively.

The minimum score in the Social Networking Scale is 18 and the maximum score in 90.

- Normal use of social networks (<20),
- Mild social networking addiction (20-39),
- Moderate social networking addiction (40-69) and
- Severe social networking addiction (70-90)

#### Study population

Was the undergraduate level students of universities located inside Dhaka city.

### Study site

The study was carried out in two selected universities (One private and one public) located inside Dhaka city. Dhaka University (Largest public university in terms of students) and North South University (Largest private university in terms of students) was selected as study site.

### Study period

The study was conducted for a period from of December 2019 to March 2020.

### Sample size

The sample size was determined by using the following formula:

$$n = \frac{Z^2 pq}{d^2}$$

$$= \frac{1.96^2(0.37)(0.63)}{(0.05)^2}$$

$$= 358.19$$

$$= 359$$

Thus, required sample size is 359 Where, n = number of desired sample size.

Z = Standard normal deviation, usually set as considering 1.96

P = Proportion of particular characteristics of the target population = 37% = 0.37\* q = (1-p) = 1-0.37 = 0.63

d = Allowable error in the study (considered as 5%).

### Prevalence source

Ramesh Masthi NR, Pruthvi S, Phaneendra MS. A Comparative Study on Social Media Usage and Health Status among Students Studying in Pre-University Colleges of Urban Bengaluru. *Indian J Community Med.* 2018;43(3):180-184.

### Inclusion criteria

- Undergraduate level students of universities located inside Dhaka city.
- Internet users
- Who was willing to participate in the study and provided written consent.

### Exclusion criteria

Refused to give inform consent.

### Sampling technique

Convenience sampling technique was used for the selection of the samples.

### Data collection procedure

The main Data collection tool was Structured questionnaire. Self-administered interview was conducted among university students. There was both close ended and open-ended questionnaire. For the reliability of the tool, pretest was done in similar situation with 5% sample size and modification was incorporated to the final draft. The detail of questionnaire was then finalized.

### Data collection and analysis

Statistical Package for Social Science (SPSS) is widely used data management and analysis software. After collection of data, it was entered and cleaned in Microsoft XL and then analyzed by using the SPSS 23 for windows. Descriptive statistics of the study was done by frequency and percentage. Cross tabulation analysis to see the association, was done out by using persons Chi-square test. Result is presented in graphs, charts table.

### Quality control and quality assurance

Quality control and Quality Assurance is very important in every study. Validity and reliability of the study depends on it. Therefore, the following measures was considered for this purpose,

- To control the measuring variation of the instrument, measuring instrument was calibrated regularly before going outside for data collection.
- Pretest of the questionnaire test in the similar among 5% on the estimated sample size and modification.
- Regular help and guidance from the supervisor was taken.
- To minimize the intra-interviewer variation regular review of the literature was done. = Report was built with interviewed questionnaire was check daily in order to ensure its completeness, correctness and internal consistency.
- Collection of all data and analyze was done by researcher himself.
- To minimize the biological variation, inclusion and exclusion criteria was considered while selection of the sample.

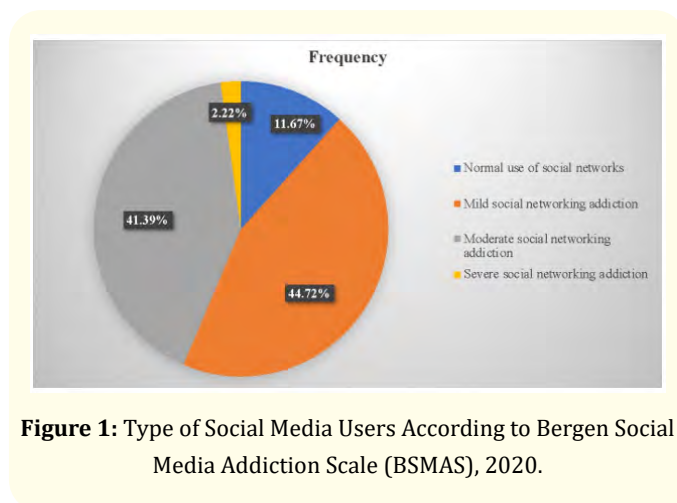
**Ethical considerations**

- Ethical approval was taken from the Department of Public Health, North South University.
- Before attempting to start data collection, an introduction letter was collected from the Chairman of the Department of Public Health of North South University.
- The right of refusal to participate in the study, and confidentiality of the information to be gathered was assured to each of the respondents.
- The data collection team was also be warned about the privacy of the respondents.

**Results**

**Prevalence of social networking addiction**

Overall 360 completely interviewed study participants data were considered for analysis. Among the participants 42 (11.67%) were normal internet user, 161 (44.72%) participants had mild social networking addiction, 149 (41.39%) had moderate social networking addiction, and only 8 (2.22%) had severe social networking addiction. We have further categorized study participants into two categories, where 203 (56.38%) had no/minimal addiction to social networking and remaining 43.62% had moderate/severe social networking addition. Therefore, we can say the prevalence of moderate/severe social networking addiction is 43.62%.



**Figure 1:** Type of Social Media Users According to Bergen Social Media Addiction Scale (BSMAS), 2020.

**Socio-demographic characteristics of the study participants**

Among the 360 students, most of them 283 (78.6%) were more than 19 years old and the percentage of female participants were higher (61.4%) than male participants. The Body mass index (BMI) calculated according to the scale developed NHS (UK). It is defined as a person’s weight in kilograms divided by the square of the person’s height in meters (kg/m<sup>2</sup>). A high prevalence (40.6%) of overweight/obesity was observed among the university students. Moreover 18 (5%) participants were found underweight. We have tried to balance the number of participants from each academic year. Highest portion comes from 4<sup>th</sup> year (29%), followed by 2<sup>nd</sup> year (24.4%) and 1<sup>st</sup> year (23.6%). Majority of the participants mother was housewife (79.2%) and majority of the fathers were service holder (43.3%).

Variables	Category	Frequency	Percentage
Age	≤19 years	77	21.4
	>19 years	283	78.6
Gender	Male	139	38.6
	Female	221	61.4
BMI Category	Underweight	18	5.0
	Normal weight	196	54.4
	Overweight/Obese	146	40.6
Academic Year	1 <sup>st</sup> year	85	23.6
	2 <sup>nd</sup> year	88	24.4
	3 <sup>rd</sup> year	82	22.8
	4 <sup>th</sup> year	105	29.2
Fathers Occupation	Service	156	43.3
	Business	121	33.6
	Others	83	23.1
Mothers Occupation	Housewife	285	79.2
	Business	24	6.7
	Service	27	7.5
	Others	24	6.7
Marital Status	Unmarried	322	89.4
	Married	38	10.6
Living With	Family	195	81.9
	Hostel/Mess	65	18.1
Number of Members Family	≤4 members	223	61.9
	>4 members	137	38.1



Monthly Income Family	< 30000 Taka	31	8.6
	30000-50000 Taka	136	37.8
	>50000 Taka	193	53.6
Times Required to Reach University	<30 minutes	110	30.6
	30-60 minutes	151	41.9
	>60 minutes	99	27.5

**Table 1:** Frequency distribution of socio-demographic variables of study participants, 2020.

Among the study participants 38 (10.6%) were married. Around 82% of the students were living with family members and remaining 18.1% were living in hostel/mess etc. More than 38% participants had more than 4 members in their family (father, mother, siblings). The economic condition of the study participants was far higher than the conditions of overall Bangladesh as most of the participants were from private universities and 53.6% participants had family income more than 50000 taka per month. When analyzed regarding the times requirement to reach university, 27.5% reported that they need more than one hour to reach in the university.

**Activity related characteristics of study participants**

Among the study participants 98 (27.2%) pass more than hours of sedentary time every day and 56.4% pass around 1-3 hours of sedentary activities. Participants were also categorized according to their sleeping hour in 24 hours. Majority of the participants (64.7%) had no issue regarding sleeping and 17.2% had poor sleep experiences. The percentage of current smoker was 31.9% and 6.7% was used to take alcohol. Most of our study participants (54.7%) reported the use of more than four hours of internet per hour.

The study participants were also asked regarding the most used website/applications. Where 80% participants reported the use of social website/application as the most commonly used websites.

**Personal, Family and Social issue related characteristics**

We have analyzed the personality types of the study participants majority (31.9%) were found introvert/shy/homebody

Variables	Category	Frequency	Percentage
Sedentary activity	<1 hour	59	16.4
	1-3 hour	203	56.4
	>3 hour	98	27.2
Sleeping status	High (>8 hours)	65	18.1
	Normal (6-8 hours)	233	64.7
	Poor (<6 hours)	62	17.2
Smoking status	Never smoked	225	65.5
	Current smoker	115	31.9
	Past smoker	20	5.6
Drink Alcohol	Yes	24	6.7
	No	336	93.3
Average hour in internet daily	<4 hours	163	45.3
	≥4 hours	197	54.7
Types of website/applications mostly use	Educational	27	7.5
	Social website	288	80
	Gaming	23	6.4
	Others	22	6.1

**Table 2:** Frequency distribution of activity related characteristics of study participants, 2020.

followed by 75 (26.9%) were extrovert/social, 47 (13.1%) were conscientiousness/well organized, 27 (7.5%) were agreeableness/kind and remaining 6.7% were neuroticism/depressed.

Variables	Category	Frequency	Percentage
Personality type	Extrovert/social	97	26.9
	Introvert/shy/homebody	115	31.9
	Openness to experience/creative	47	13.1
	Agreeableness/kind	27	7.5
	Conscientiousness/well organized	50	13.9
	Neuroticism/depressed	24	6.7

Stressful or negative life events	Yes	165	45.8
	No	195	54.2
Family level detachment history	Yes	69	13.3
	No	291	80.8
Parents are active in social media	Yes	103	28.6
	No	257	71.4
Siblings are active in social media	Yes	333	92.5
	No	27	7.5
Problems in the relation with your close one	Yes	49	13.6
	No	311	86.4
Family spend huge time on social media	Yes	95	26.4
	No	265	73.6
Give less priority to your household	Yes	40	11.1
	No	197	54.7
	Sometimes	97	26.9
Activities due to social media	Rarely	26	7.2
Friends use social media a lot?	Yes	263	73.1
	No	97	26.9
Friends encourage/ stimulates you	Yes	61	16.9
	No	299	83.1
Environment of university is internet friendly	Yes	326	90.6
	No	34	9.4

**Table 3:** Frequency distribution of Personal, Family and Social issue related characteristics of study participants, 2020.

More than 45% students reported that they have history of stressful or negative life events. Family detachment history was also reported by 13.3% study participants. 28.6% reported that their parents and 92.5 reported their siblings are active in social media. One out of four each study participants think that their

family members spend huge time on social media and 13.6% said they have problems in the relation with your close one. Most of the students (90.6%) think that the environment of their university is environment friendly. More than 73% respondents think their friends use social media a lot and 16.6% thinks their friends encourage stimulates regarding social media use.

**Social media related variables**

The largest portion of the study participants (57.5%) using internet based social networking for 5-8 years and 8.1% using social site for more than 8 years. Most of students in our study use social site 2-3 hours daily and more than 20% use more than three hours daily. Most of the participants use smartphone or tablet (87.5%) for social networking purpose mostly.

Variables	Category	Frequency	Percentage
Years have been using social websites	< 2 Years	24	6.7
	2-4 Years	100	27.8
	5-8 Years	207	57.5
	>8 Years	29	8.1
Time spend on the social websites daily (average)	< 1 hour	94	26.1
	1-2 hours	47	13.1
	2-3 hours	146	40.6
	>3 hours	73	20.3
Device used for using social websites mostly	Computer (desktop/ laptop)	45	12.5
	Mobile phone/Tablet	315	87.5
Social website used mostly	Facebook	256	71.1
	Twitter	27	7.5
	LinkedIn	23	6.4
	Instagram	22	6.1
	Viber	24	6.7
	Tik-Tok	8	2.2
Internet service used package	Broadband connection	98	27.2
	Mobile internet packages	70	19.4
	Both	192	53.3

Task mostly social websites done in	Update status/ medias	22	6.1
	Read/ comments or Like	198	55.0
	All	140	38.9
Main purpose social website of using	Passing free time	171	47.5
	Relationship and communication	73	20.3
	Mood changing purpose	46	12.8
	All	70	19.4

**Independent factor association (Chi-square test)**

Among the social sites Facebook is the most widely and commonly used social website. Facebook is the most commonly used social site for more than 71% study participants. Students use both broadband and mobile network most of the cases for using social website. Participants reported that, they use social website mostly for passing free time (47.5%) and for communication purpose (20.3%).

Among the socio-demographic characteristics, Age of the participants (Chi-square = 7.29; P = 0.007), Gender (Chi-square = 21.78; P < 0.001), BMI category (Chi-square = 10.71; P = 0.005), Academic Year (Chi-square = 10.38; P = 0.016), Number of Family members (Chi-square = 8.41; P = 0.004), Monthly Family Income (Chi-square = 8.12; P = 0.0014), Times Required to reach in the university was found significantly associated with level of social-media addiction.

**Table 4:** Frequency distribution of Social media related variables of study participants, 2020.

Variables	Category	Social media addiction		Chi-square	P value
		No/minimal	Moderate/severe		
Age	≤19 years	33 (42.9%)	44 (57.1%)	7.29	0.007
	>19 years	170 (60.1%)	113 (39.9%)		
Gender	Male	57 (41.0)	82 (59.0)	21.78	<0.001
	Female	146 (66.1)	75 (33.9)		
BMI Category	Underweight	15 (83.3)	3 (16.7)	10.71	0.005
	Normal weight	118 (60.2)	78 (39.4)		
	Overweight	70 (47.9)	76 (52.1)		
Academic Year	1 <sup>st</sup> year	36 (42.4)	49 (57.6)	10.38	0.016
	2 <sup>nd</sup> year	58 (65.9)	30 (34.1)		
	3 <sup>rd</sup> year	47 (57.3)	35 (42.7)		
	4 <sup>th</sup> year	62 (59.0)	43 (41.0)		
Fathers Occupation	Service	86 (55.1)	70 (44.9)	3.58	0.17
	Business	63 (52.1)	58 (47.9)		
	Others	54 (65.1)	29 (34.9)		

Mothers Occupation	Housewife	168 (58.9)	117 (41.1)		
	Business	10 (41.7)	14 (58.3)	6.45	0.09
	Service	16 (59.3)	11 (40.7)		
	Others	9 (37.5)	15 (62.5)		
Marital Status	Unmarried	180 (55.9)	142 (44.1)	0.296	0.58
	Married	23 (60.5)	15 (39.5)		
Living With	Family	164 (55.6)	131 (44.4)	0.42	0.51
	Hostel/Mess	39 (60.0)	26 (40.0)		
Number of Family	≤4 members	139 (62.3)	84 (37.7)	8.41	0.004
	>4 members	64 (46.67)	73(53.3)		
Monthly Family Income	< 30000 Taka	25 (80.6)	6 (19.4)	8.12	0.017
	30000-50000 Taka	74 (54.4)	62 (45.6)		
	>50000 Taka	104 (53.9)	89 (46.1)	29.15	<0.001
Times Required to Reach	<30 minutes	84 (76.4)	26 (23.6)		
	30-60 minutes	79 (52.3)	72 (47.7)		
	>60 minutes	40 (40.4)	59 (59.6)		

**Table 5:** Association between socio-demographic variables of study participants and social media addiction.

Among the activity related characteristics, daily sedentary hours (Chi-square = 17.36; P < 0.001), smoking status (Chi-square = 20.2; P < 0.001), and habit of drinking alcohol (Chi-square = 16.5; P < 0.001) was found significantly associated with level of social-media addiction.

Variables	Category	Social media addiction		Chi-square	P value
		No/minimal	Moderate/severe		
Sedentary activity	<1 hour	42 (71.2)	17 (28.8)	17.36	<0.001
	1-3 hour	122 (60.1)	81 (39.9)		
	>3 hour	39 (39.8)	59 (60.2)		
Sleeping status	High (>8 hours)	37 (56.9)	28 (43.1)	0.7	0.68
	Normal (6-8 hours)	134 (57.5)	99 (42.5)		
	Poor (<6 hours)	32 (51.6)	30 (48.4)		
Smoking status	Never smoked	147 (65.3)	78 (34.7)	20.2	<0.001
	Current smoker	46 (40.0)	69 (60.0)		
	Past smoker	10 (50.0)	10 (50.0)		
Drink Alcohol	Yes	4 (16.7)	20 (83.3)	16.5	<0.001
	No	199 (59.2)	137 (40.8)		

**Table 6:** Association between activity related characteristics of study participants, and social media addiction.

Among the personality, family and social issue related characteristics, Personality type (Chi-square = 20.2; P < 0.001), Parents are active in social media (Chi-square = 6.79; P = 0.009) was found significantly associated with level of social-media addiction.

Variables	Category	Social media addiction		Chi-square	P value
		No/minimal	Moderate/severe		
Personality type	Extrovert/social	39 (40.2%)	58 (59.8%)	28.9	<0.001
	Introvert/shy	83 (72.2%)	32 (27.8%)		
	Openness to experience/creative	32 (68.1%)	15 (31.9%)		
	Agreeableness/kind	16 (59.3%)	11 (40.7%)		
	Conscientiousness/well organized	23 (46.0%)	27 (54.0%)		
	Neuroticism/depressed	10 (41.7%)	14 (58.3%)		
Stressful or negative life events	Yes	88 (53.3%)	77 (46.7%)	1.156	0.28
	No	115 (59.0%)	80 (41.0%)		
Parents are active in social media	Yes	47 (45.6%)	56 (54.4%)	6.79	0.009
	No	156 (60.7%)	101 (39.3%)		
Siblings are active in social media	Yes	187 (56.2)	146 (43.8)	0.098	0.75
	No	16 (59.3%)	11 (40.7)		
Problems in the relation	Yes	28 (57.1)	21 (42.9)	0.13	0.9
	No	175 (56.3)	136 (43.7)		
Friends use social media a lot	Yes	151 (57.4)	112 (42.6)	0.42	0.52
	No	52 (53.6)	45 (46.4)		
Friends encourage/ stimulates you	Yes	33 (54.1)	28 (45.9)	0.16	0.69
	No	170 (56.9)	129 (43.1)		
University is internet friendly	Yes	179 (54.9)	147 (45.1)	3.078	0.079
	No	24 (70.6)	10 (29.4)		

**Table 7:** Association between Personal, Family, Social issue related characteristics and social media addiction.

**Discussion**

Our research aimed to evaluate the prevalence social media addiction among undergraduate university students of different Dhaka city and its ordination by various socio-demographic, activity, social and social media use related characteristics of students.

Overall 360 completely interviewed study participants data were considered for analysis. Among the participants 11.67% were normal internet user, 44.72% participants had mild social

networking addiction, 41.39% had moderate social networking addiction, and only 2.22% had severe social networking addiction. The prevalence of moderate/severe social networking addiction is 43.62%. These findings are relevant to a recently conducted studies in Iran in similar study settings [42].

Among the socio-demographic characteristics, Age of the participants, Gender, BMI category, Academic Year, Number of Family members, Monthly Family Income, Times Required to reach in the university was found significantly associated with

level of social-media addiction. These findings correspond with previous literature [43]. It may be because males are usually more obsessive regarding the unknown or searching new or they are more attracted in social media objects compared with the female. On the other hand, people living with larger family members pass more times with family members which works against social media addiction. In a study conducted previously also found the highest levels of SNS addiction related to age groups of less than 20 years old [44]. Economic status was also as an important factor for social media addiction was identified by study conducted in Bangladesh and Greece [45,46].

Among the activity related characteristics, daily sedentary hours smoking status and habit of drinking alcohol was found significantly associated with level of social-media addiction. Previously conducted studies observed that increased number of sedentary hours significantly increased the risk of Internet addiction as well as social media addiction [47].

Among the personality, family and social issue related characteristics, Personality type, Parents are active in social media was found significantly associated with level of social-media addiction. This finding supports previous research study conducted among the students of University of Dhaka which using same cut-off score. That is having depressed personality, late night sleep and having some kind of stressful or bad life events increase the risk of developing Facebook addiction. Study done among Italian citizen also found that specific personality trait like neuroticism increase the likelihood of becoming Facebook addicted. Depressed person has less emotional stability and unable to manage their stress and anxiety condition that's why they use social networking site to cope with their symptoms. Depressed person depends more on social networking site to express their emotional feelings and for communication rather face to face interaction [48,49].

Among the study participants 38 (10.6%) were married. Around 82% of the students were living with family members and remaining 18.1% were living in hostel/mess etc. A high prevalence (40.6%) of overweight/obesity was observed among the university students. When analyzed regarding the times requirement to reach university, 27.5% reported that they need more than one hour to reach in the university. This is due to high traffic jam of Dhaka city which causing both time and economic loss of city dwellers.

Most of our study participants (54.7%) reported the use of more than four hours of internet per hour. The study participants were also asked regarding the most used website/applications. Where 80% participants reported the use of social website/application as the most commonly used websites. Most of the participants also indicates Facebook as mostly used websites indicates the popularity of it.

## Conclusion and Recommendations

### Conclusion

Social networking site is an essential part of modern life but addictive use can cause detrimental effect both on the user and the society. Our study has revealed a relatively high prevalence of moderate/severe social networking addiction is 43.62% among the undergraduate university students. A number of socio demographic variables, activity related characteristics, family and social issue related characteristics was also found significantly associated with social media addiction. Increased level of social media addiction might a burden to young generation in future. Therefore, essential steps must be taken to combat the upcoming burden. The outcome of this study might be helpful for decision making process of the government and corresponding authority.

### Recommendations

- The parents and guardian's knowledge regarding social media addiction would be important to control. Therefore, necessary steps should be taken from university to acknowledge parents regarding social media addiction and its complications.
- More parental supervision should be implicated so that students daily social media use does not turn into addictive behaviour.
- Students should be informed frequently by their parents, teachers and elderly one about bad consequences of overuse of social networking site.
- Those who already become severely addicted should be taken to a psychiatrist so that appropriate counselling and treatment if needed can be taken on time.
- The bad impact of overuse of social media should be broadcasted in TV channels, therefore mass people will learn the impact of overuse.

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