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Exploring the triggering factors for mental stress of university students amid COVID-19 in Bangladesh: A perception-based study

Sadman Shafiq a, Sharmin Nahar Nipa a,*, Sharmin Sultana b, Md. Rifat-Ur- Rahman c, Md. Mostafizur Rahman d

a Centre for Climate Change and Environmental Research (C3ER), BRAC University, Dhaka 1212, Bangladesh
b Department of Economics, Rabindra University, Bangladesh, Sirajganj 6770, Bangladesh
c Department of Cultural Heritage and Bangladesh Studies, Rabindra University, Bangladesh, Sirajganj 6770, Bangladesh
d Department of Environmental Sciences, Jahangirnagar University, Dhaka 1342, Bangladesh

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ABSTRACT

After the emergence of the COVID-19 pandemic in Bangladesh, the Government decided for lockdown over two months lasting until 30 May 2020. All the universities, along with other educational institutions, are closed down until 19 December 2020. Such measures, however, have the potential to cause and exacerbate the mental stress in people, especially the students. The study aimed to explore the triggering factors which increase the mental stress of the students of both public and private universities amid COVID-19 pandemic. To that end, 1000 students of different public and private universities of the country were surveyed online. Under this study, a quantitative approach was undertaken to infer information from relevant variables through the use of descriptive analysis. Moreover, several virtual Key Informant Interview (KII) sessions were conducted with university teachers, education scholars and psychosocial counselor to get expert views on an effective education system, safeguard of the students and suggestions to reduce the stress of them. The survey result shows that students of private universities (80.6%) were found more mentally stressed than students of public universities (77%). Students of public universities were particularly stressed because of financial crisis and looming university session jam whereas, students of private universities were mentally stressed because of uncertainties of online classes/or activities and high tuition fees. Therefore, it is indispensable to bring in time-oriented policy and plan for the management of education system as well as safeguard of the students amid this pandemic and implement with strong monitoring may decrease the mental stress of them.

1. Introduction

The recent outbreak of COVID-19 that started in late December in China has generated shockwaves around the globe. As of 10 November 2020, 51,895,802 people have contracted the disease, and 1,279,145 people have died (Worldometers, 2020a, 2020b). To thwart the spread of the disease, Governments all over the world have undertaken lockdown measures with varying degrees of strictness so that people maintain Quarantine1 and Social distance2 among themselves. The measure is taken to reduce further spread of the disease and to ascertain the number of people who have become infected.

As lockdown is a measure to limit the social interactions of people and put individuals into isolation, it can have negative mental health consequences (Brooks et al. 2020). Thus, there is a necessity for research into the social, psychological and neuroscientific aspects of the COVID-19 disease (Holmes et al. 2020). Brooks et al. (2020) reviewed 24 published papers to delve into the psychological impacts that quarantine can have on people. The reviewed studies contained related information of 10 countries that have experienced the SARS, Ebola, the 2009 and 2010 H1N1 influenza pandemic, Middle East respiratory syndrome, and equine influenza. It was found that quarantine was associated with psychological effects like post-traumatic stress symptoms, anxiety,

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1 ‘Quarantine is the restriction of movement and separation of people who have been potentially exposed to a contagious disease’ (CDC, 2017).
2 ‘Social distancing, also called “physical distancing,” means keeping a safe distance between yourself and other people who are not from your household” (CDC, 2020).
confusion and anger. The major stressors include longer quarantine duration, infection fears, frustration, boredom. Proper information dissemination among the public regarding the outbreak and quarantine was also deemed necessary for quarantine measures to be successful. It is also useful to pose the question as to why quarantine may induce such psychological problems. A study found depression, serious problems at work, domestic violence and high perceived stress to be significant contributors to causing anxiety (Kader, Mohd Sidik, Rampla, & Mukhtar, 2015). Lockdowns and quarantines measures as a result of pandemic have the potential to result in the contributing factors listed above.

Ahmad, Rahman, and Agarwal (2020) conducted a study to find the impact of COVID-19 on the Indian population through an exploratory survey. The study found that 25.3% of the people impacted by the measures taken due to COVID-19 were facing anxiety. One of the leading causes for the causation of anxiety was uncertainty regarding one’s health, the health of loved ones, disruption to regular activities, and the unknown aspects of the disease (Cava, Fay, Beanlands, McCay, & Wignall, 2005). Another study concluded that the major reason for people experiencing increased mental health problems during outbreaks of diseases could be the lack of social interactions among people and due to lack of socialization and social networks younger portion of the population is more prone to depression (Okamoto et al. 2011).

It is estimated by UNESCO that educational institutions closures are affecting about 1,083,997,781 learners in 116 countries. So far, 61.9% of the world’s enrolled learners have been impacted due to nationwide closures (UNESCO, 2020). Therefore, the mental health outcome of university students due to the global pandemic is important to examine because university students were observed to suffer from psychological problems during normal times (Auerbach et al., 2016). A study found one-third of the first-year students were having mental health problems (Bruffaerts et al., 2018). Another study conducted on Turkish university students found that moderate to severe levels of depression, anxiety and stress were found in 27.1, 47.1 and 27% of the respondents, respectively. Female students were observed to have higher stress scores. First and second-year students were found to have higher depression, anxiety and stress scores compared to other groups (Bayram & Bilgel, 2008). Hunt & Eisenberg (2010) have also found university students to be prone to mental health problems. In a study conducted on Swiss college students explored that, lockdown and social distancing measures were found to be negatively affecting the social integration of a number of individuals. It also induced feelings of isolation and stress. It was also found that, due to the reduction of the social networks (pleasant interaction, friendship, social support, co-studying) of the students, levels of stress, anxiety, loneliness, and depressive symptoms were worsened (Elmer, Mepham, & Staddfeld, 2020). Another study conducted on students and staffs of a Spanish University found that significant numbers of the respondents were severely impacted by the pandemic. 21.34%, 34.19% and 28.14% of the respondents showed severe scores of anxiety, depression and stress, respectively. It was observed that the students suffered more psychological problems compared to the staff (Odriozola-González, Planchuelo-Gómez, Irrutia-Muniz, & de Luis-García, 2020). A study conducted on French university students found that the students were susceptible to excessive stress and anxiety due to the pandemic, among which students who were living alone were more vulnerable compared to students who lived with their parents and relatives (Husky, Kovess-Masfety, & Swendsen, 2020). Concerted interventions from a preventative dimension could be used to mitigate such issues.

A study conducted on an adult population amid COVID-19 in Bangladesh so far. A wide-ranging group of people, i.e. students, teachers, bankers, housewife, other jobholders, etc. have participated in the surveys. A recent study found that the population in Bangladesh is susceptible to socio-economic crisis due to the COVID-19 pandemic. It also found that the pandemic has also been responsible for creating additional unemployment, deprivation and hunger. Moreover, the poorest have been found to be suffering the most from food and nutrition deficiency due to loss of livelihood (Shammi, Bodrud-Doza, Islam, & Rahman, 2020). On the other hand, another study conducted by Shammi, Bodrud-Doza, Islam, and Rahman (2020) found that formal and informal business, economy, and education sector has been hampered severely due to the COVID-19 lockdown. Moreover, a relationship between the loss of livelihood and unemployment has also been found to be significant in the study. Another study conducted in 2020 explored that, an overwhelming number of people have been suffering from stresses caused by the COVID-19 pandemic such as sleep shortness, short temper and chaos in the family. The study also found a link between mental stress and economic hardship (Islam, Bodrud-Doza, Khan, Haque, & Mamun, 2020). A survey conducted in Bangladesh also found that, about 60% of the participants in the survey had been suffering from mental stress and a significant relationship was found between socio demographic condition and mental health outcomes through multivariate logistic regression analysis (Banna et al. 2020).

Along with the studies conducted on the adult population, it was found that some studies were also conducted specifically on university students of Bangladesh as of 10 November 2020. A study conducted by Ahmed, Ahmed, Alam, Khan, and Jobe (2020) portrayed that students and part-time employees were suffering from higher stress, anxiety and depression as well as lower well-being amid COVID-19 pandemic. Another study on Bangladeshi students found that around 15% of the students were suffering from moderately severe depression and 18% of the students were suffering from anxiety during COVID-19 outbreak (Islam, Barna, Raihan, Khan, & Hossain, 2020).

In the context of Bangladesh, as in most developing countries, dramatic changes in higher education have taken place in the last few decades. In 1921, the 1st public university in Bangladesh, University of Dhaka was established. In the subsequent decades, a number of public universities were also established in different parts of the country. On the other hand, private universities came into existence from the 1990s as the public universities were unable to meet market demand and had been suffering from poor governance (Rabbani & Chowdhury, 2014). Currently, there are 46 public universities, 107 private universities and 3 international universities in Bangladesh (UGC, 2020). The main feature of the public universities is that these universities are highly subsidized by the government, whereas, private universities are mainly dependent on tuition fees of the students (UNESCO.IIEP, 2007; Mazumder, 2014). The composition of students in these two types of universities also differs in terms of socioeconomic status. Students of reputable private universities are found to have been coming from higher socioeconomic backgrounds, and it was also found that education quality was a significant determining factor for choosing specific universities (Ali, Hossain, & Akhtar, 2018).

Previous studies on the mental health of private university students of Bangladesh revealed that 60% of the students were experiencing anxiety, depression and panic episodes and, grading and workload were found to be significant stressors (Hoque, 2015). Another study conducted for determining the causes of health problems on a public university in Bangladesh found 52.2%, 58.1% and 24.9% of the respondents were experiencing severe levels of depression, anxiety and stress respectively and major risk factors were identified as being from a lower-class family, being a cigarette smoker, and engaging in less physical exercise (Mamun, Hossain, & Griffiths, 2019).

Since the first detection on 08 March 2020, in Bangladesh, the country recorded 6108 deaths by 10 November 2020, of the ongoing COVID-19 pandemic according to Worldometers (2020a, 2020b). Due to the impact of the coronavirus pandemic, Bangladesh went into lockdown from 17 March 2020 to 30 May 2020 (Kamrurraman, 2020). Along with that, all the universities, along with other educational institutions, are closed down until 19 December 2020. During the closure period, some private universities continued their academic venture by online based activities. But few public universities initiated online activities so far; however, maximum universities were unable to continue their academic activities due to several reasons as of 10 November 2020 (Prothom Alo, 2020). In Bangladesh, COVID-19 pandemic is affecting the mental health of
university students, and several associated factors are responsible for this. As the student’s background of a public and private university is different in terms of socioeconomic status and government financial assistance, etc., it is anticipated that the factors related to mental health problems can be diverse. Thus, the study attempted to explore the triggering factors which are increasing the mental stress of the students of both public and private university differently during the COVID-19 pandemic. The findings of the study would be helpful to assess and invent necessary interventions to reduce the mental stress of the university students amid COVID-19 pandemic or future pandemic.

2. Objective

The objective of the study is to explore the triggering factors which increase the mental stress of the students of both public and private universities amid COVID-19 pandemic.

3. Methodology

3.1. Study procedure

Under this study, both qualitative and quantitative approaches were used to attain the objective. Several literatures, i.e. print and electronic media, websites and journal articles were extensively reviewed to understand the global and national perspective of COVID-19 pandemic situation as well as the impact of this pandemic on the human being especially students.

After that, a questionnaire was prepared, bearing in mind the issues revealed from the review. A total of 24 items were considered in the questionnaire to find out the perception of the students on mental stress and associated factors amid this pandemic. The questionnaire was designed considering the items like age, gender, family status, earning status of the students (before and during the pandemic), mental stress for losing the source of income, activities during pandemic or lockdown period, availability of electronic devices, internet usage, ability to attend online class and views on effective online education system of the country, etc. Therefore, the uses of 24 items were considered appropriate to fulfill the purpose of the study.

Google form-based questionnaire was prepared to survey several public and private university students of the country. Initially, an online survey form was sent to various universities through Email, Facebook, Messenger and WhatsApp to collect the information. In total, 1694 students of 10 numbers of universities responded voluntarily. The respond numbers of each university were not similar. Numbers of samples of 100 or more from a university were gathered from only five public and five private university students which were analyzed later. Moreover, after removal of 694 incomplete and irrelevant samples, 1000 responses were retained for this study. The survey was conducted from 16 May 2020 to 27 May 2020.

Some Key Informant Interview (KII) sessions with the university teachers of surveyed public and private universities, education scholars and psychosocial counselor were conducted over the phone along with the online survey. After analyzing the result, these interviews were conducted to get expert views on an effective online education system and safeguard of the students. As the teachers of both the universities are well known about their university situation (ability to organize online class and exams, etc.) along with their students (socio-economic status and ability to attend the online class), they were interviewed to assemble appropriate recommendations/measures which would ultimately reduce the mental stress of the students. Besides, the survey result showed that the students are facing mental stress due to several reasons; therefore, the opinions of a psychosocial counselor were also accumulated and described under this study which would further reduce the mental stress of the students. Based on their recommendations, the government or university authority can initiate suitable measures related to online education system and safeguard of the students to decrease the stress of the students.

3.2. Data analysis

The survey data for the study has been cleaned and arranged using R statistical software. Descriptive statistical analysis has been conducted with the data to find out the characteristics of the relevant variables and to ascertain any relationship among them. The descriptive analysis with data visualization has been carried out by Tableau software.

3.3. Ethical statement

Guidelines of the Helsinki Declaration on human participant research were followed during the online study. Before the collection of data, all the respondents were well informed regarding the objectives of the study, and the respondents provided information anonymously without any financial motivation. Before starting the survey, the respondents were provided with full freedom whether to take part or not, and also the participants could withdraw from the survey at any point without justification. All the participants give their consent for publishing and communicating the outcome of the survey without their identifiable information.

4. Results

4.1. General characteristics of the students

Of the total students surveyed, about 35.6% are female, and 64.4% are male. The median age of private university students is 23, while the interquartile range is 2. There is a presence of outliers at both extremes. In contrast, the median age of public university students is 22 having an interquartile range of 4, and the distribution is more disperse compared to that of private university students. According to survey results about 30% of the total students are studying in their 4th year of Bachelor’s degree whereas; about 18% of the students are studying in the rest of the academic years each.

It is also observed that almost three-quarters of the students of private universities live in cities during this pandemic. On the other hand, 49.2% of public university students live in the cities and the rest 50% in towns and villages. The general characteristics of the students are shown in Table 1.

4.2. Source of income of the students before and during pandemic

About 31% of the students of private university students had a source of income to cover study expenses before the pandemic, and 43% of the students from public university students had a source of income to cover study expenses (Table 1).

After the onset of the pandemic, only 9% of the private university still had a source of income. On the other hand, about 7% of the public university students had a source of income during the pandemic (Table 1). Therefore, it can be inferred that a considerable number of students lost their source of income during the pandemic. However, the students of public universities were more affected because before the pandemic as a greater number of them lost their source of income.

Fig. 1 shows that, among the private university students who lost their source of income, about 46% of the students lost their source of income due to transport unavailability, 22% were uninterested in continuing their jobs during the pandemic, 15% lost their source of income because the job providers were unable to pay during the pandemic and 10% lost source of income due to forced termination. In case of public university students, the most significant number of students at 33% lost their source of income due to forced termination, 21% lost their source of income because they had left the area, 15% were uninterested in continuing their jobs during the pandemic, and job providers could not pay to 14% of the students.
mostly use mobile data. About 70% of the students from private universities use broadband/Wifi to use the internet, and public university students mostly (Fig. 2).

66% of the public university students use smartphones whereas, 33% of students of public universities use broadband/Wifi, whereas; only 33% of students of private universities use it. During this pandemic, 67% of the students of private universities used the internet for more than four hours a day. Most of the public university students use the internet less than four hours a day at 80% (Fig. 2). Students of public universities face more problems relating to internet access. Nevertheless, slow internet connection is the major cause of internet activity interruption, which ultimately affects the online class activity for both public and private university students. The expensiveness of the internet is also a factor, especially for public university students.

Based on the aforementioned factors, it was explored that greater numbers of students of private universities are able to attend online classes compared to students of public universities. Fig. 3 reflects that 76% of private university students are able to attend online classes whereas; only 33% of students of public universities can attend online classes because of slow internet connectivity as they are currently residing in either town or villages and lack of money to buy internet data.

4.4. Activities of the students during pandemic

During COVID-19 pandemic and subsequent lockdown measures, the enormous numbers of private university students at 38% are had been spending most of their time using different social networking sites such as Facebook, Instagram, etc. About 25% had been watching movies, 13% had been participating in online courses, and about 10% had been spending most of their time through reading novels and literature. On the other hand, most of the students of the public universities are spending most of their time through reading novels and engaging in household activities. About 12% and 10% of students spend most of their time on social networking sites and watching movies, respectively (Fig. 4).

4.5. Impact of COVID-19 pandemic on mental stress

4.5.1. Perception on COVID 19 pandemic regarding mental stress

A clear majority of the number of the students has felt mental stress due to the COVID-19 pandemic and the subsequent lockdown measures taken as a result of it. The private university students appear to be affected slightly more by it at 80.6% compared to the public university students, of whom 77% have been affected by mental stress (Fig. 5). The students of 4th year were found more stressed during COVID-19 outbreak time than the other academic years for both universities (Fig. 6).

4.5.2. Variation in triggering factors which increase mental stress

The reason for mental stress differs among the students of private and public universities (Fig. 7). 36% of the students of private university reported that online classes were a reason for their mental stress as they are not used to it. Other reasons were tuition fees, closing of earning source and financial crises of their family members. For the students of public universities, 35% reported financial crisis, 25.5% reported university session jam, 21% reported closing of earning source and 18.4% reported online courses to be the factors responsible for their mental stress. Fig. 8 clearly expresses that the factors of mental stress for both the university students are different to a great extent. However, some factors affected their mental stress in a parallel manner.

4.6. Views of the students on online education system

According to the students of both public and private universities, several initiatives can be undertaken to initiate and implement effective online education in Bangladesh which would further reduce their mental stress (Table 2). These are the initiatives which were suggested by them during the survey. The major views of the students are as follows:

4.7. Recommendations on mental stress, education system and safeguard of the students

A number of recommendations were articulated during the interview with Psychosocial counselor, which would further reduce the mental stress of the students. Moreover, the issues needed to be considered for the education system and how the safety of the students can be ensured have been summarized below. The information on the effective education system and safeguard of the students were collected from the KIIs with the university teachers and education scholars.

Measures to reduce the mental stress are:

- Students should accept this pandemic as reality and try to cope up with the new circumstances.
- Adequate sleep has to be ensured by the students at night.
- Regular exercise, yoga, meditation, etc., need to be practiced.
- The students might develop alternative skill during this pandemic like art, crafting, gardening, etc.
- The students need to involve themselves in different online based activities such as a live webinar, dialogue, debate, etc.
- Each academic institute should provide Tele-counseling service to reduce mental stress during or after the pandemic for every student.

4.3. Status of device use and internet usage during pandemic

Private university students use internet services, mostly through laptop and multiple devices. 40% use laptop and about 35% use multiple devices whereas, 66% of the public university students use smartphones mostly (Fig. 2).

According to the result, private university students mostly use Broadband/Wifi to use the internet, and public university students mostly use mobile data. About 70% of the students from private universities use broadband/Wifi, whereas; only 33% of students of public universities use it. During this pandemic, 67% of the students of private universities used the internet for more than four hours a day. Most of the public university students use the internet less than four hours a day at 80% (Fig. 2). Students of public universities face more problems relating to internet access. Nevertheless, slow internet connection is the major cause of internet activity interruption, which ultimately affects the online class activity for both public and private university students. The expensiveness of the internet is also a factor, especially for public university students.

Based on the aforementioned factors, it was explored that greater numbers of students of private universities are able to attend online classes compared to students of public universities. Fig. 3 reflects that 76% of private university students are able to attend online classes whereas; only 33% of students of public universities can attend online classes because of slow internet connectivity as they are currently residing in either town or villages and lack of money to buy internet data.
• An assessment needs to be conducted to find out issues related to the mental stress of the students. Based on the assessment, different initiatives can be undertaken by the authority.
• Parents need to be considerate of their children so that they can cope with the pandemic situation.
• Teachers need to show a positive attitude to students. It might be very helpful for the students to overcome the stress from this pandemic.

Actions for effective education system during COVID-19 or another pandemic are:

A Pandemic Management Plan needs to be developed for the universities of the country to tackle the ongoing or future pandemic. The plan may consider the following issues-

Effective online education system
Arrangement of effective online education system considering the issues like-

• Ability to arrange online activities by the university authority and ability to attend the online activities by the students (especially public university);
• Appropriate exam system (suitable grading policy, exam outline, customization of syllabus and assessment and Evaluation) and
• Conducts need assessment to understand the status of suitable device use and internet accessibility of the students, etc.
• Organize training on the online education system for the teachers and students.

Operation/Execution of physical education during Pandemic

• Arrangement of preventive measures to secure the health and well-being of the students under the new normal situation like the education institute needs to ensure the use of masks and maintain social distance in the classroom and premises as well.
• Arrangement of adequate soap and sanitizer to disinfect hands and ensure the use of fever measuring device at the entrance to determine the body temperature and take actions accordingly.
• Arrangement of regular health checkup for the students. If any sign of COVID-19 appears on the students, they need to be treated immediately.

Others

• Establish a Pandemic Management Committee at every university to solve the problems of the student’s regarding online class, exams, financials need, etc. The committee will also monitor the execution of different strategies during the pandemic.
• Establish a central monitoring wing by the government to effectively monitor the initiatives, i.e. online education, safeguard activities for the students and health measures initiaves, i.e. use of mask, sanitizer and maintain social distancing in the class and university premises, etc. during the COVID-19 or another future pandemic.

Fig. 1. Reason for loosing income source.
which would reduce the mental stress of the students. Moreover, these can also be considered during the preparation of pandemic management plan mentioned earlier.

- Waiving of tuition fees.
- Arrangement of regular psychological counseling to overcome mental stress.
- Providing free internet facilities for students.
- Development of student’s assistance fund.
- Arrangement of life insurance by the university authority.
- Providing financial aid for the needy students to buy a smartphone as well as to arrange low-interest bank loan to manage their house rent and other expenses.

5. Discussion

This perception-based study was undertaken to understand the variation in triggering factors which are affecting the mental stress of the students of the public and private university of Bangladesh.

The study results portrayed that maximum students from public universities are involved in different income-generating activities. The reason for it could be that public university students feel more compelled to bear some cost of their education due to their disadvantaged economic background. A considerable portion of private university students is also engaged in earning to supplement their education costs because not all of these students come from wealthy backgrounds. Due to this COVID-19 pandemic students of public universities left their residential halls to go back to their homes. Social distancing measures also meant that a significant earning source of university students; providing private tuition to school and college students also had to be stopped. Both private and public university students lost their source of income because of this. Therefore, the loss of income compounded the mental stress of both the students. A recent study also disclosed that 75.2% of the students of various universities of Bangladesh had lost their source of income and therefore, 63% are facing a financial crisis which affecting their mental and psychological wellbeing (Begum et al. 2020).
It is observed that most private university students spent most of their time using social networking sites such as Facebook, Instagram etc. This is because as the students became physically isolated, they quenched the longing for socialization through spending more time engaging in social networking sites. A second most significant portion of private university students spent their time watching movies. Interestingly, a considerable portion attended online classes during this period, which was also identified as a major cause of mental stress during the survey. The activities of private university students indicate that they had ample access to the internet and electronic technology. In contrast, the majority of the public university students spent most of their time reading novels, gardening and engaging in activities pertaining to their household. This indicates that public university students have more space in their household and lesser access to internet and electronic devices. Such outcomes fit the narrative as more public university students live in towns and villages where internet connectivity is low. Thus, most of the students of the public university are unable to attend online classes. The difference in internet and technology access is also highlighted by the electronic devices that the students of each of the category of universities use. The public university students predominantly use smartphones in accessing the internet, while private university students mostly use laptops along with other devices. It indicates that options of internet services and use of devices that a private university student can avail are more extensive than that of a student of a public university.

During the pandemic, the social isolation, along with the uncertainty of the future, has created mental stress in students of both private and public universities. It is revealed from the survey results that the students of private universities are more prone to mental stress (80.6%) compared to students of public universities (77%). However, the major factors for mental stress among private and public university students differ because of the underlying condition of the students of each category. Private university students are suffering from mental stress...
because of factors such as online classes/activities, tuition fees and due to earning sources being closed while students of public university students are mentally stressed because of the financial crisis and the prospect of university session jam. There are multifarious reasons for the difference in mental stress among the students of each category. The private universities continued the studies through online classes/or activities from very early on. For many students, it created more mental stress because they were not used to such systems of education. Moreover, the students became uncertain regarding how exams will be taken, and grades will be given to them on the basis of online exams. Although online learning has been presented as a new mode of learning, not all students are able to access this kind of education because of social
inequality in many nations (UN News, 2020). Moreover, online modes of learning do not entail in the same level of socialization, and social networks that in be experienced in conventional learning. Another stressor, the tuition fee is explained by the high tuition fees that the private university charges. Though the socioeconomic condition of the students of a private university is far better than a public university, but during the lockdown, the economy had to be mostly halted, and many people lost their jobs, and they also suffer due to this. A recent study conducted by BRAC revealed that about 95% people in Bangladesh went through a huge loss in their income due to COVID-19 pandemic (BRAC, 2020). Therefore, it is logical for the students to be stressed about paying high tuition fees to the universities as the parents of some students lost their job or source of income which is a noteworthy triggering factor for increasing the mental stress enormously. Especially the students of 4th year are affected by mental stress compared to that of the public university of the same year. As the students of the private university have to pay high tuition fees, and therefore they are always keen on finishing their academic degrees and joining the workforce. Additionally, the extension of the university session would mean more tuition fees for private university students, which would lead to a delay in entering the job market.

On the other hand, public university students are, however, mainly stressed by the financial crisis and the prospect of university session jam. Kocalevent, Hinz, Brähler, and Klapp (2011) also showed in their research that, low socioeconomic status and poor self-perceived health are also observed to be the determinants of elevated fatigue and perceived stress. Fatigue and stress may result in long-lasting tension. As many public university students belong to the working class and lower-income families, an extended period of pandemic and subsequent lockdown measures could mean the loss of jobs of their family members which could put the whole family into financial crisis. Studies also revealed that numerous numbers of the family already lost their source of income. Therefore, maximum students of the public university and some students of the private university are unable to attend the online class due to inability to buy mobile data. Though the financial crisis is not a new triggering factor for the students of a public university, however, their inability to attend online classes resulting extended session jam and loss of job of their family members act as an amplified triggering factor which increases their stress to a great extent. A recent study conducted in 2020 also explored that COVID-19 pandemic has elevated the mental stress among people in Bangladesh because of increased uncertainty and loss of livelihood (Shammi et al., 2020).

Concurrently, maximum public universities could not continue their learning session because of the pandemic and had not taken any online educational measures such as online classes and assessment, etc. Very few universities have initiated online classes/or activities during this pandemic; however, as of 10 November 2020, maximum universities were unable to continue their academic session due to several reasons. This inevitably means that the academic year will not end in due time for public university students. In the past, the session jam was a very crucial matter for the students of public university students as a result of political unrest. However, the situation has been changed over the years, and maximum public universities succeed to solve the problem of session jam. However, the COVID-19 pandemic threatens to unravel all the gains achieved so far (TBS News, 2020) and this particular issue acts as a triggering factor for their stress as a menace of session jam looms large over public universities jam due to this pandemic, since maximum public universities are still not in a situation to hold online classes due to several reasons, i.e. costly data, poor internet connection and lack of suitable device, etc. Delay in getting the degree will also delay their getting into the workforce, or a good number of students will expire their entrance age for public services. According to Bangladesh Bureau of Statistics (2018), the number of unemployment population for Bangladesh is 2.6 million, and the unemployment rate is 4.2, and the impact of COVID-19 would further worsen the unemployment crisis of the country (BBS, 2018). The result also shows that the students of 4th year are found mentally stressed more rather than the other educational year as like as private university; however, the reason for mental stress is
This study tried to compare the identified factors of mental stress with some Asian countries to justify the study results due to similar country context. During the literature review, it was found that several studies were conducted on the impact of COVID-19 on the students of the Asian region. The study results of such research portrayed that the online education, socio-economic condition, rural and urban location, etc. are affecting the mental health of the students. A study conducted on Pakistani students found that modes of online and distance learning were not efficacious in underdeveloped countries like Pakistan due to the inability of the majority of students to access such modes of learning (Adnan & Anwar, 2020). Factors like lack of access to fast, affordable and reliable internet connections thwart the process of online learning in Pakistan especially for the students who are living in rural and marginalized communities (Wains & Mahmood, 2008). Agha (2020) pointed out that the impact of online teaching is not optimum in India as all students are not capable of affording usage of online platform and easily transitioning to online learning which may have a negative impact on the career paths of the students. Cao et al. (2020) explored that poor economic conditions, daily life actions and hampered academic activities are related to the anxiety problems among students during COVID-19 in China.

This study also tried to explore the views of the students on the online education system during the pandemic, which would further reduce the mental stress. The views of both the students of the public and private university were similar except few issues given by private university students. They were all recommended to provide free internet, consider the percentage of the smartphone user and consider financial crisis during the planning of online education, etc. The training on online education to the teachers and initiation of awareness program for them also need to be arranged as recent study portrayed that there is always a chance that some faculty will face some obstacle who are not good with technology (Sahu, 2020). Besides, the students of private university recommended to waiving the tuition fees, which was the main reason for high mental stress of them according to the study results. They also suggested arranging Psychological counseling session (Telecounseling) by every university, which would also help them to reduce their mental stress. Nevertheless, the counselors strongly suggested accepting the pandemic as reality and try to cope up with the new circumstances which would further help to minimize their mental stress to some extent. Moreover, the recommendations on the issues related to safeguarding the students given by the teachers and the education scholars would reduce the mental stress of the students, i.e. establishment of student assistance fund, providing life insurance to the students and providing financial aid to buy a smartphone, etc. One of the private universities of the country already established the student assistance fund. The training on online education to the teachers and initiation of awareness program for them also need to be arranged as recent study portrayed that there is always a chance that some faculty will face some obstacle who are not good with technology. The training on online education to the teachers and initiation of awareness program for them also need to be arranged as recent study portrayed that there is always a chance that some faculty will face some obstacle who are not good with technology.
The pandemic management plan can be envisaged. The issues mentioned under the plan can also be considered guidelines for online education and physical education under this pandemic. These initiatives can also be followed by other public as well as private universities. Some public universities also started providing support to the students who had suffered from mental stress due to the pandemic. However, the students of the private university are found more stressed rather than the students of the public university. Surprisingly, the triggering factors increasing the mental stress of each of the target group differ. The study results clearly indicate that university students need special attention due to their increasing level of mental stress associated with online education, financial condition, session jam, etc. Therefore, it is indispensable to bring time-oriented policy and plan for the management of education system as well as safeguard of the students amid this pandemic and implement with strong monitoring may decrease the mental stress of them.

7. Conclusion

This perception-based study tried to identify the significant triggering factors which increased the mental stress of the students of Bangladesh during COVID-19 pandemic. Students of both universities had suffered from mental stress due to the pandemic. However, the students of the private university are found more stressed rather than the students of the public university. Surprisingly, the triggering factors increasing the mental stress of each of the target group differ. The study results clearly indicate that university students need special attention due to their increasing level of mental stress associated with online education, financial condition, session jam, etc. Therefore, it is indispensable to bring time-oriented policy and plan for the management of education system as well as safeguard of the students amid this pandemic and implement with strong monitoring may decrease the mental stress of them.

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CRediT authorship contribution statement

Sadman Shafiq: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Software, Validation, Visualization, Writing - original draft. Sharmin Nahar Nipa: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Supervision, Visualization, Writing - original draft, Writing - review & editing. Sharmin Sultan: Conceptualization. Md. Rifat-Ur- Rahaman: Conceptualization, Data curation, Writing - original draft. Md. Mostafrizur Rahman: Methodology, Visualization, Writing - original draft, Writing - review & editing.

Declaration of Competing Interest

We have no conflicts of interest to disclose.

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Table 2
Views of the students on online education system.

| Public University | Private University |
|-------------------|--------------------|
| A massive awareness program needs to be taken to reduce the mental stress of the students. | -Do- |
| University may use a common platform to take online classes and post all lectures on this platform so that the students can watch the recorded class later at any time. | -Do- |
| Effective online based education training program needs to be provided for the teachers so that they can easily handle the students. | -Do- |
| As most of the students come from lower-middle-class families, so the Government need to provide free internet for the students. | -Do- |
| All the students do not use a smartphone which needs to be considered during the planning of an online education system. | -Do- |
| Many of guardians are jobless during the pandemic. So, their financial situation needs to be considered during the planning of an online education system. | -Do- |
| A large number of students left the study place and had been staying in remote areas. Many of them left their study materials in their residence hall or mess. So, it would be a major challenge for the students to prepare themselves for further studies from home. | -Do- |

Tuition fees need to be waived during the pandemic. Psychological counseling needs to be arranged to reduce mental stress. Ensuring that all students from anywhere in the country can participate in the online classes. Teachers should not put pressure on their students to attend all classes; rather they should behave in a friendly manner to reduce their stress. The syllabus needs to be customized as the students are suffering from mental stress.

fund to support students during this pandemic (The Business Standard, 2020). Some public university also started providing support to the students who are in financial crisis currently (Dhaka Tribune, 2020). These initiatives can also be followed by other public as well as private universities. In a nutshell, a pandemic management plan can be formulated for the management of the education system of the universities during COVID-19 pandemic as the current condition may continue for a long time. What issues need to be considered during the planning and execution of online education and physical education under this plan was briefly articulated under this study. Moreover, if this kind of pandemic may arise in the future again, this plan can be used accordingly. The issues mentioned under the plan can also be considered during the preparation of such pandemic management plan by the government of Bangladesh.

6. Limitations of the study

Among the 46 public universities and 107 private universities, only 10 university students have participated in the online survey. As this is a volunteer survey, it was not possible to ensure the participation of all the universities. However, further studies can be undertaken to understand the perspective of a maximum number of university students. The detail socioeconomic background at the family level of the students was not explored during the online survey. Thus, it is not possible to provide a clear context of connection between the socioeconomic background of the students of both universities and their digital device use. Few indications of the socioeconomic status were articulated and described based on the review of some literatures. Since it was a volunteer survey, it was not possible to ensure the equal participation of male and female. Moreover, gender perspective analysis was not carried out as the main focus was to explore the triggering factors. However, another study may be conducted later on to analyze the mental stress of female students due to the pandemic.
