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## ORIGINAL ARTICLE

# Mental health impacts of COVID-19 outbreak and associated drivers among university students in Bangladesh

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ABSTRACT

BACKGROUND: Mental health impacts due to COVID-19 outbreak are observable among university students. The aim of this research was to determine the mental health impacts of COVID-19 outbreak and associated drivers among university students in Bangladesh.
METHODS: A cross-sectional study was performed among 368 participants from Khulna University (Khulna-9208) in Bangladesh. Data were collected through an online self-reported questionnaire including demographic and selected characteristics of the participants, 7-item generalized anxiety disorder (GAD-7) scale to measure the prevalence of anxiety and 9-item patient health questionnaire (PHQ-9) scale to measure the prevalence of depression. The ordered logit model was used to determine the associated drivers of anxiety and depression.
RESULTS: The estimated prevalence rates of anxiety were 87%, among them 29.3%, 33.7%, and 23.9% had mild, moderate and severe, respectively. Accordingly, the estimated prevalence rates of depression were 81.5%, among them 25%, 23.9%, 20.1%, and 12.5% had mild, moderate, moderately severe and severe, respectively. The likelihood of anxiety and depression among participants has been mostly derived by residing urban area, not having stable family income, living with parents, having relatives or acquaintances infected with COVID-19, being worried about academic delays, and with the disruption of daily-life.
CONCLUSIONS: University students are experienced a higher level of anxiety and depressive symptoms in Bangladesh. As the majority of students spend their time in social media during the quarantine, the implications of COVID-19 on mental health in this population can be reduced by means of online consultancy, campaigns and other awareness initiatives.

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KEY WORDS: COVID-19; Mental health; Bangladesh.

The outbreak of novel Coronavirus (COV-ID-19), initiated in China in the late December 2019, has spread very quickly all over the world with 498,912 deaths and 9,997,683 positive cases globally, as of June 27, 2020, leading to an appearance of severe contagious pneumonia.[1, 2] The mortality risk rate of COVID-19 in China was predicted at 2.3%,[3] and by June 27, 2020, the mortality rate has been estimated to be more than 5% in terms of the confirmed cases, worldwide.[2, 4] The World Health Organization had announced the COVID-19 as a pandemic on March 11, 2020,[5] while the first three cases of COVID-19 were identified on March 8, 2020

in Dhaka, Bangladesh.[6] Like other countries, COVID-19 in Bangladesh has already become a significant public health issue due to its large population and various factors. According to the official website of the Directorate General of Health Services (DGHS) of Bangladesh, there were 133,978 confirmed cases (which is higher than the China), and 1,695 deaths of COVID-19 found in Bangladesh as of June 27, 2020.[7]

The government of Bangladesh has announced a general holidays since 26 March, 2020 to combat the expansion of COVID-19 outbreak.[8] In contrast, all schools, colleges and universities have been shut down since March 18, 2020.[9] Those holidays have been extended step by step with the increase of confirmed cases and deaths. Besides, Prime Minister Sheik Hasina indicated that the shutdown would be withdrawn gradually, but educational institutes would perhaps remain closed until September.[10] Correspondingly, all the offices have been re-opened to a limited extent in compliance with health rules since May 31, 2020 but all the educational institutions are remained close till August 06, 2020.[11, 12] This circumstances may adversely affect the study of university students, interrupt their regular patterns of behavior, and have an impact on their mental health. In addition, home quarantine, social and spatial distancing as well as other limitations are likely to affect the psychology of students and their mental well-being.[13, 14]

Public health emergencies, in alignment with stress and perceived risk perceptions can invoke significant negative feelings.[15, 16] Students may have mental disorders resulting from intensifies in cases, sequels of distancing/isolation methods and beginning and attending lectures in the sense of the COVID-19-related stress factors.[17] This can result in feelings of hopelessness, fear of death and dissatisfaction among quarantine students.[18] Studies suggested that students may experience tension, anxiety, frustration, boringness, loneliness and other feelings, both with a short-term and long-term effect when they are quarantined and outside their universities and daily schedules.[19, 20] These feelings can contribute in the short run to sleep issues, changes in eating habits and the presence of possible addic-tive disorders, which can then raise anxiety and depression as well.[21]

Initial quarantine steps have become wide-spread[19] and, therefore, may lead to the worse mental conditions of students. Recent studies have found the prevalence of mental health impact due to COVID-19 among the university level students.[17, 22-25] The prevalence of depression and anxiety among university students have been found to be 62.9% and 63.6%, respectively due to COVID-19 outbreak in Bangladesh. Being female, nuclear family, urban residence, excessive sleeping without sleeping satisfaction, more internet use, no satisfaction with academic study, smoking habit, fear of infection, financial uncertainty, inadequate food supply, absence of physical exercise and limited or no recreational activity etc. have been found to be the significant predictors of depression and anxiety among university students in Bangladesh.[17, 24]

However, the increased levels of depression and anxiety among university students in Bangladesh emphasize the requisite for future studies among this population. Besides, the scenario of COVID-19 in Bangladesh is getting deteriorated day by day with the increasing number of confirmed cases and deaths.[26] Furthermore, this study enrolls relative or acquaintance infected with COVID-19, worry about academic delays, worry about future economic problems, daily life disruption, and worry about social support as the associated drivers of mental health impact due to COVID-19[23] which have not used by the previous study in Bangladesh, yet. The study may help to identify issues of mental health and persuade the corresponding authorities in the development of policy measures to tackle this significant public health crisis. Thus, the goal of this research was to determine the mental health impacts of CO-VID-19 outbreak and associated drivers among university students in Bangladesh.

## Materials and methods

### Study design and location

The present cross-sectional study was conducted among the students who are enrolled in the undergraduate and regular master's program of Khulna University (Khulna-9208, Bangladesh).

Khulna University is a public university which is situated at South-western region of Bangladesh. Currently, there are 8 schools, 1 institute, 29 disciplines, and 6,965 students in the university.[27]

**Data collection**

Data have been gathered from June 09, 2020 to June 27, 2020. The responses were extracted using an online self-reported survey questionnaire (using the google survey tool – Google Forms), as well as using a convenience sampling technique. The questionnaire was written in both Bangla and English languages. Questionnaire circulated in the social media. The questionnaire includes demographic and selected characteristics of the participants, 7-item generalized anxiety disorder (GAD-7) scale to measure the prevalence of anxiety and 9-item patient health questionnaire (PHQ-9) scale to measure the prevalence of depression. The GAD-7 is a dependable and trustworthy instrument to track anxiety and to determine its intensity in epidemiological studies.[28] This scale includes 7-item responded on a 4-point Likert Scale which is ranged from 0 ("not at all") to 3 ("nearly every day"). According to the scores 0-4, 5-9, 10-14, and 15-21, the level of anxiety was classified in four categories respectively: minimal, mild, moderate and severe. On the contrary, the PHQ-9 Scale is a helpful instrument that examines the prevalence of depressive symptoms in epidemiological studies among general public.[29] This Scale includes 9-item responded on a 4-point Likert scale which is ranged from 0 ("not at all") to 3 ("nearly every day"). According to the scores 0-4, 5-9, 10-14, 15-19, and 20-27, the level of depression was classified in five categories respectively: minimal, mild, moderate, moderately severe, and severe. Both the GAD-7 and PHQ-9 have already become a well-established instrument for non-clinical studies with reasonably good psychometric properties and have been already used among the university students of Bangladesh.[30]

**Study population inclusion**

All students enrolled in an undergraduate and regular master's programme were included in this study. A total of 372 participants voluntarily responded in the online self-reported survey

questionnaire which was circulated in the social media. From the 372 participants, four did not agree to participate in the study. The data were therefore processed and analyzed for 368 participants.

**Statistical analysis**

Depending on the descriptive and inferential statistics, the data were processed, analyzed and interpreted. After collecting, editing and coding of data, it was processed and analyzed by using Statistical Package on Social Science (SPSS) 20.0 and STATA 13.0 Windows version. Demographic and selected characteristics of the participants and the prevalence of anxiety and depression among the participants were analyzed by means of descriptive statistics. Inferential statistics included Kruskal-Wallis H test to determine the mean difference between the different groups of the demographic and selected characteristics with the prevalence of the level of anxiety and depression. Finally, an empirical model was used to determine the associated drivers of mental health impacts due to COVID-19 outbreak among the participants. By considering P value <0.05 as statistical significance, the analysis was conducted.

**Empirical model**

*Ordered logit model*

Anxiety and depression are characterized at a four-point and five-point scale, respectively and are therefore categorized in ordered nature. For maintaining the ordered outcome, ordered logistic regression model is one of the best statistical models that is used as an empirical model for analysis in this study.[23] The ordered logit model can be written as:

$$\Pr(Y \leq j) = \ln\left(\frac{\sum \text{pr}(Y \leq j)|X}{1 - \sum \text{pr}(Y \leq j)|X}\right) =$$

$$= \alpha_j + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_9 X_9$$

Where, Y= level of anxiety/depression (which is categorized into 4 for anxiety: minimal =0, mild =1, moderate =2 and severe =3 and 5 for depression: minimal =0, mild =1, moderate =2, moderately severe =3, and severe =4); α = threshold; β1-β9 = estimated parameters; Xi are

explanatory variables. Level of anxiety/depression was regressed as outcome variables, and demographic and selected characteristics of the participants as explanatory variables (Table I). The analysis was performed on STATA 13.0 Windows version.

### Ethical considerations

This research was conducted in accordance with the Helsinki Declaration. The study had been approved by an institutional research ethics committee. Informed consent had been taken from the participants. Each of the participants read and understood the aim of the research and voluntarily agreed to take part in the research.

## Results

### General characteristics of the participants

The general characteristics of the study participants are presented in Table I. A total of 217 (59%) participants were male. The residential estimates of the participants appeared nearly

TABLE I.—*Univariate analysis of the participants about mental health impacts (N.=368).*

| Characteristics | All N. (%) | Anxiety | | | Depression | | |
|---|---|---|---|---|---|---|---|
| | | Mean rank | χ2 | P value | Mean rank | χ2 | P value |
| Gender | | | 1.50 | 0.220 | | 0.17 | 0.674 |
| Male | 217 (59.0) | 179.06 | | | 186.40 | | |
| Female | 151 (41.0) | 192.31 | | | 181.76 | | |
| Residence | | | 1.08 | 0.297 | | 6.56 | 0.010* |
| Urban | 196 (53.3) | 189.69 | | | 197.50 | | |
| Rural | 172 (46.7) | 178.58 | | | 169.69 | | |
| Stable family income | | | 16.01 | <0.001** | | 14.07 | <0.001** |
| No | 162 (44.0) | 208.51 | | | 207.42 | | |
| Yes | 206 (56.0) | 165.62 | | | 166.48 | | |
| Living with parents | | | 5.08 | 0.024* | | 7.81 | 0.005** |
| No | 28 (7.6) | 142.71 | | | 131.71 | | |
| Yes | 340 (92.4) | 187.94 | | | 188.85 | | |
| Relative or acquaintance infected with COVID-19 | | | 5.04 | 0.025* | | 8.53 | 0.003** |
| No | 249 (67.7) | 176.24 | | | 173.56 | | |
| Yes | 119 (32.3) | 201.78 | | | 207.38 | | |
| Worry about academic delays | | | 16.90 | <0.001** | | 7.49 | 0.006** |
| No | 80 (21.7) | 143.00 | | | 156.36 | | |
| Yes | 288 (78.3) | 196.03 | | | 192.32 | | |
| Worry about future economic problems | | | 6.24 | 0.012* | | 4.31 | 0.038* |
| No | 33 (9.0) | 142.14 | | | 148.65 | | |
| Yes | 335 (91.0) | 188.67 | | | 188.03 | | |
| Disruption of daily life | | | 20.36 | <0.001** | | 22.51 | <0.001** |
| No | 40 (10.9) | 115.75 | | | 110.90 | | |
| Yes | 328 (89.1) | 192.88 | | | 193.48 | | |
| Worry about social support | | | 8.75 | 0.003** | | 10.38 | 0.001** |
| No | 64 (17.4) | 150.19 | | | 146.45 | | |
| Yes | 304 (82.6) | 191.72 | | | 192.51 | | |
| Level of anxiety | | | | | | | |
| Minimal | 48 (13.0) | | | | | | |
| Mild | 108 (29.3) | | | | | | |
| Moderate | 124 (33.7) | | | | | | |
| Severe | 88 (23.9) | | | | | | |
| Level of depression | | | | | | | |
| Minimal | 68 (18.5) | | | | | | |
| Mild | 92 (25.0) | | | | | | |
| Moderate | 88 (23.9) | | | | | | |
| Moderately severe | 74 (20.1) | | | | | | |
| Severe | 46 (12.5) | | | | | | |

P value obtained from Kruskal-Wallis H test.
*P value <0.05; **P value <0.01.

identical, with about 53.3% (N.=196) of the participants residing in urban area. Approximately, 44% (N.=162) of the participants reported that their family income was not stable. The majority of the students (N.=340, 92.4%) were living with their parents. Nearly, one-third of the participants (N.=119, 32.3%) claimed that their relative or acquaintance infected with COVID-19. The majority of the participants narrated that their daily life had been disrupted (N.=328, 89.1%) and they had been worried about academic delays (N.=288, 78.3%), future economic problems (N.=335, 91%) and social support (N.=304, 82.6%) due to the outbreak of COVID-19 pandemic.

**Prevalence of different mental health impacts among the participants due to COVID-19 outbreak**

The prevalence of different levels of mental health impacts among the participants due to COVID-19 outbreak has also been presented in Table I. The estimated prevalence rates of anxiety were 87%, among them 29.3%, 33.7%, and 23.9% had mild, moderate and severe, respectively. Accordingly, the estimated prevalence rates of depression were 81.5%, among them 25%, 23.9%, 20.1%, and 12.5% had mild, moderate, moderately severe and severe, respectively. Table I also shows the prevalence of different mental health impacts based on the mean rank of the general characteristics of the university students in Bangladesh. The prevalence of anxiety and depression was found with the higher mean rank of not having stable family income, being live with parents, having relative or acquaintance infected with COVID-19, being worried about academic delays, being worried about future economic problems, with the disruption of daily life and being worried about the social support during the pandemic. Furthermore, the prevalence of depression was found among the participants with the higher mean rank of residing in the urban area.

**Associated drivers of different mental health impacts among the participants due to COVID-19 outbreak**

The ordered logit model had been employed to determine the associated drivers of different mental health impacts (anxiety and depression) due to COVID-19 outbreak among university students in Bangladesh. Estimated result of the ordered logit model on associated drivers of different mental health impacts (anxiety and depression) due to COVID-19 outbreak among participants are presented in Table II. The likelihood of mental health impacts (anxiety and depression) due to COVID-19 outbreak among participants had been mostly derived by not having stable family income and with the disruption of daily life in this study.

Participants with the disruption of daily activities were about 2.98 and 3.42 times more likely to be suffering from anxiety and depression than their counterparts, respectively. In contrast, participants having stable family income were about 47% and 46% less likely to be suffering from anxiety and depression than those family incomes were not stable, respectively.

Additionally, participants being worried about academic delays were 1.91 times more likely to be suffering from anxiety than their counterparts. Furthermore, the likelihood of depressive symptoms was 2.22 times more likely to be higher among the participants due to live with parents. Also, participants having relative or acquaintance infected with COVID-19 were about 1.51 times more likely to be suffering from depression than their counterparts. In contrast, participants residing rural area were about 40% less likely to be suffering from depression than their counterparts residing urban area.

## Discussion

Studies had found that public health crisis could have many mental health and psychological impacts for the students of the university that can be conveyed as anxiety, depression, fear, worry and others.[17, 23, 24, 31, 32] This study was conducted to determine the mental impacts due to COVID-19 outbreak and their associated drivers among university students in Bangladesh. The result of this study showed that the estimated prevalence rates of anxiety and depression were 87.0% and 81.5%, respectively. Compared with a pre-COVID-19 study among the same population in Bangladesh, the prevalence levels of depression

TABLE II.—*Estimated result of the ordered logit model on associated drivers of different level of mental impacts due to COVID-19 among participants.*

| Characteristics | Anxiety | | Depression | |
|---|---|---|---|---|
| | OR [95% CI] | P value | OR [95% CI] | P value |
| Gender | | | | |
| Male (Ref.) | | | | |
| Female | 1.39 [0.93-2.07] | 0.099 | 0.92 [0.62-1.36] | 0.704 |
| Residence | | | | |
| Urban (Ref.) | | | | |
| Rural | 0.81 [0.54-1.21] | 0.311 | 0.60 [0.40-0.89] | 0.012* |
| Stable family income | | | | |
| No (Ref.) | | | | |
| Yes | 0.53 [0.34-0.81] | 0.003** | 0.54 [0.35-0.81] | 0.004** |
| Living with parents | | | | |
| No (Ref.) | | | | |
| Yes | 1.73 [0.86-3.49] | 0.121 | 2.22 [1.11-4.43] | 0.022* |
| Relative or acquaintance infected with COVID-19 | | | | |
| No (Ref.) | | | | |
| Yes | 1.31 [0.87-1.99] | 0.191 | 1.51 [1.00-2.27] | 0.048* |
| Worry about academic delays | | | | |
| No (Ref.) | | | | |
| Yes | 1.91 [1.17-3.12] | 0.009** | 1.29 [0.80-2.09] | 0.288 |
| Worry about future economic problems | | | | |
| No (Ref.) | | | | |
| Yes | 1.26 [0.63-2.54] | 0.506 | 1.07 [0.54-2.11] | 0.841 |
| Disruption of daily life | | | | |
| No (Ref.) | | | | |
| Yes | 2.98 [1.53-5.80] | 0.001** | 3.42 [1.72-6.81] | <0.001** |
| Worry about social support | | | | |
| No (Ref.) | | | | |
| Yes | 1.40 [0.83-2.35] | 0.202 | 1.47 [0.88-2.46] | 0.140 |

*P value <0.05; **P value <0.01
OR: odd ratio; CI: confidence interval; Ref.: reference.

(52.2% to 74.1%) and anxiety (58.1% to 61.9%) were higher in this study.[33, 34] The levels of depression (69.5%) and anxiety (61.0%) in this research have also been higher relative to a latest study among a smaller sample of first-year university students in Bangladesh based on relevant research instruments.[30] The prevalence estimate of depression and anxiety in this study compared with the global context were higher than in previous university students in Malaysia (37.2% to 63.0%) and Turkey (27.1 to 47.1%).[35, 36] Moreover, in the context of COVID-19, this study findings are also higher than the previous study among the university level students in Bangladesh which was 33.3% to 62.9% for anxiety and 46.92% to 63.6% for depression, respectively.[17, 24] This results are also very higher compared to the recent study in China (the home of COVID-19 outbreak initiation) including 24.9% and 9%, respectively.[23, 25]

The prevalence estimates of depression and anxiety among university students in this research appear to be higher relative to the other studies that measure depression and anxiety among same populations. Mental health issues may be highly prevalent due to uncertainty in the examinations, classes and university re-opening, and strict social isolation,[37] but may represent other causes, based on the current COVID-19 contexts of Bangladesh. Moreover, educational institutions have been remained close more than three months in Bangladesh.[9] This kind of shutdown usually leads to uncertainty about the educational and occupational career of the pupils and amplifies the chronic psychological problems among university students.[31, 34, 35] Additionally, the survey report of YoungMinds stated that 83% of young people believe that their current mental health conditions due to COVID-19 outbreak have been exacerbated as a result of the

interruption and lack of regularly scheduled and restricted social contact.[38] Studies also revealed that those people who are more worried,[39] more socially isolated[40] and have less social support,[41, 42] are more likely to have higher mental health symptoms.

The impact of the COVID-19 on the academic delays and future jobs of the students could have been linked to develop anxiety and depression.[43, 44] On the contrary, the increasing rate of social distancing due to home quarantine among people may have been the reason for the anxiety and depression among the students. Due to the lack of social contact, mental health problems are estimated to engage and exacerbate with greater frequency.[37, 45] Additionally, the growing numbers of patients and confirmed cases with the growing number of affected regions and countries by this pandemic have been shown to have led the public concerns to be more likely to be infected by the pandemic, which might contributing in the development of anxiety and depression.[1]

The findings of the ordered logit model demonstrated that anxiety and depression among university students in Bangladesh regarding the pandemic had been associated with their place of residence, status of family income, whether living with parents, whether a relative or an acquaintance was infected with COVID-19, whether worried about academic delays and with disruption of daily life. However, no gender disparity was found in this study which is contrasted from the previous study findings in Bangladesh.[17, 24] This disparity implies that both the male and female participants had similar mental anxiety, depression and adverse emotions due to the outbreak.

This research has shown that students residing in the urban area had been suffering from depression. This results are consistent with the recent study among university students in Bangladesh.[17] This might be occurred due to increasing rate of confirmed cases in the urban and city areas.[26] The present study found that having family income not stable, the prevalence estimates of anxiety and depression were comparably higher among the participants than their counterparts. This is commensurate with epidemiological research that might be justified through steadily increasing psychological and economic pressure.[23, 46]

Earlier research has been shown that university level students not living with parents had contributing factors linked to mental and anxiety disorders.[23] But, unsurprisingly this was not consistent with findings of this study. Rather, living with parents was found to the significant factors for developing depressive symptoms among the participants in this study. This might be occurred due to the sudden home quarantine situation. Most of the university students are living in the student dormitories and campus area where they lead an independent life. Due to the COVID-19 outbreak, all the educational institutions have been remained close since 18 March, 2020 in Bangladesh.[9] As a result, the university students are staying at home with their parents during the last three months which might be disrupt their independent life and leading to develop depressive symptoms. A thorough research is suggested to examine these disparities. Relatives or acquaintances being infected with COVID-19 had been an additional contributor to the burden of depressive symptoms among university students, due to the increased transmitting characteristics of the novel Coronavirus.[47, 48] Earlier studies in China found relatives or acquaintances being infected with COVID-19 as a contributing factor for anxiety among college students,[23] which is inconsistent with this study.

Our research included academic delays, economic stressors, daily life disturbances and social support as the risk factors associated with mental health impacts (anxiety and depression) among university students in Bangladesh due to COVID-19 outbreak. In Bangladesh, all educational institutions were closed since March 18, 2020[9] and these holidays are extended till August 06, 2020.[12] Such considerations will possess a particular effect on the academic performance and student growth without any doubt and could have been linked to develop anxiety and depression consistent with our hypothesis.[43, 44] This study found that the likelihood of anxiety was significantly related to the participants with worrying about academic delays. Similar findings was found in the earlier studies among college

students in China.[23] In contrast, earlier studies among university in Bangladesh found that depressive symptoms were significantly associated with no satisfaction on academic study due to the pandemic[17] which is inconsistence with this study. Previous studies have already identified that outbreak has not only a major effects on the national health situation but also on the economic growth of the country and its population.[49] Many students might be anxious and depressed about the payment of their tuition fees, as many families would lose their earnings due to the outbreak.[23, 24] But those findings are inconsistence with this study. The government of several nations took action, including alerts and restrictions on transportation and prolonged public vacations and lockdown to handle the pandemic that undoubtedly interrupted regular life,[23, 24, 50] and contributed to develop anxiety and depression. Similarly, our study found that participants with the disruption of daily activities were more likely to be suffering from anxiety and depression than their counterparts. Finally, no significant relationship was found between the mental health impacts and worry about social support in the ordered logit model of this study. These findings are inconsistent with the previous studies.[23, 51, 52] Moreover, social support may minimize mental trauma during outbreaks and alter the view of social cooperation and assistance. These findings have implications for the design of targeted interventions, prevention programming and initiatives by the respective authorities intended to support the mental health impacts among Bangladeshi university students due to COVID-19 outbreak.

### Limitations of the study

There are some limitations in this study. First of all, the survey participants had to take part in the study using internet which indicated that their socio-economic background was higher than the general group. The generalizability of findings is thus limited. Secondly, the cross-sectional design of this study is a common limitation. It is therefore difficult to determine the nature of impact and prevents us from deciding to make causal inferences regarding our results. A longitudinal research can show findings with greater accuracy. Thirdly, a convenience sampling was used to collect data from a university of Bangladesh which is also regarded as a major limitation of this study. Thus, the results do not represent the overall university students from Bangladesh. Fourthly, this analysis has been focused on self-reported responses regarding experiences with the COVID-19 outbreak that cannot be supported by qualified data enumerators or experts. Finally, this study used 7-item generalized anxiety disorder (GAD-7) scale and 9-item patient health questionnaire (PHQ-9) scale to measure the prevalence of anxiety and depression, respectively. The application of such scales can lead to high positive false rates. Longitudinal research with sufficiently strong and nation-wide representative samples with the consideration mental health impacts and associated drivers among the same population are therefore suggested.

### Conclusions

A considerable number of university students in Bangladeshi have reported anxiety and depression due to the COVID-19 outbreak. The prevalence is increasing with significantly associated drivers of anxiety and depression which includes residing urban area, not having stable family income, living with parents, relatives or acquaintances being infected with COVID-19, being worried about academic delays, and with the disruption of daily life. University students need care, attention, support and assistance from community, family members and universities to ameliorate these public health emergency situations. The government and universities should work together to address this fundamental issue such that inexpensive, effective and crisis-oriented psychiatric care for university students are provided. As the majority of students spend their time in social media during the quarantine, the implications of COVID-19 on mental health in this population can be reduced by means of online consultancy, campaigns and other awareness initiatives. These encompasses psychological interventions in several dimensions, such as cognitive behavioral therapy (CBT), psychoeducation, self-monitoring, behavioral activation etc., by using the digital platform as all education insti-

tutions are now closed to discourage the physical contact.[53] Furthermore, online based study groups and peer groups in alignment with networking, coaching, mentoring and psychological support could be included.[54] A further justification to suggest online approaches is that young people have a broad spectrum about the applications on the online platform and smartphone.[55]

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