

IMPACT OF COVID-19 ON MENTAL HEALTH OF DHAKA UNIVERSITY STUDENTS

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Abstract

Student mental health in the university setting has been an expanding concern. The COVID-19 pandemic could be detrimental to the psychological wellness of university students. The aim of this investigation was to see the mental health outcomes of Dhaka University students during the COVID-19 outbreak. A cross-sectional survey using a convenient sampling technique was conducted among 193 students of the University of Dhaka within a time duration of 1 month. Data was gathered by utilizing the web survey including DASS-21BV, demographic questions, and health-related queries with respect to COVID-19. The prevalence of anxiety symptoms and depressive symptoms was 64.2 % and 66.9%, respectively, and 51.8% of students reported mild to extremely severe levels of stress. Age group was significantly associated with DASS-21 depression subscale scores ($\chi^2(2) = 14.179, p = .007$). Hall status was also significantly associated with DASS-21 anxiety subscale scores ($\chi^2(2) = 10.001, p = .040$). Sleep-related queries with respect to COVID-19 were significantly associated with DASS-21 anxiety subscale scores ($\chi^2(2) = 24.135, p = .002$). COVID-19-related queries on attention, enthusiasm, mental state, and self-confidence were also significantly associated with depressive symptoms, anxiety symptoms, and stress levels ($p < .001$). The COVID-19 outbreak seems to have had a considerable psychological impact on Dhaka University students and would be benefited greatly through adequate support from the relevant authorities to cope with the situation mentally.

Introduction

COVID-19 is a contagious disease caused by SARS-CoV-2, a new form of the extreme acute respiratory syndrome coronavirus⁽¹⁾ which was first reported as pneumonia of unknown etiology in a local seafood market in Wuhan, China, in December 2019⁽²⁾. The COVID-19 outbreak was declared as a Public Health Emergency of International Concern (PHEIC) by the World Health Organization (WHO) on January 30, 2020, and a pandemic afterward⁽³⁾. The first COVID-19-infected individual in Bangladesh was discovered on March 8, 2020. Until the end of March, infection rates were poor but then skyrocketed in April⁽⁴⁾. The government of Bangladesh ordered the closure of all schools and offices on March 16, 2020. In a similar vein, public gatherings were outlawed⁽³⁾, and travel from countries with high transmission potential, such as China and Italy, was prohibited⁽⁵⁾.

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Dhaka airport authorities placed all airports of Bangladesh on high alert on January 22, scanning travelers from China. Despite these efforts, COVID-19 had reached all 64 districts of Bangladesh by July 1, 2020⁽⁴⁾.

The COVID-19 pandemic's progression, a large number of infected cases and deaths, and how much isolation is impacting everyday life are all unknown to experts⁽⁶⁾. The pandemic is not only killing people across the world but also causing damage to the mental health of both Coronavirus patients and healthy people all over the world⁽⁷⁾. Mental health is an indispensable and fundamental component of well-being for healthy functioning to occur at both the individual and communal levels by recognizing his or her abilities, adjusting to everyday challenges and making a commitment to the community⁽⁸⁾. In the past, infectious disease outbreaks have had a profound impact on people's mental health⁽⁹⁾. A high level of anxiety and stress is a natural response to such an unusual situation⁽¹⁰⁾. These findings are a serious matter of concern as mental health is vital to an individual's ability to function productively in life⁽⁸⁾.

To see the psychological impact of the corona epidemic, several worldwide studies were performed with the general public as well as people in particular professions⁽¹¹⁻¹⁴⁾. Due to the corona outbreak, 150 countries had closed their educational institutions around the world as of March 25, 2020. The decision impacted 80 % of the world's student population⁽¹⁵⁾. However, in low- and middle-income countries (LMICs) like- Bangladesh, it is very difficult to handle both COVID-19 and the different mental health issues that rise up out of the outbreak and there has been little research into the psychological effects of the pandemic, especially among university students in Bangladesh. A study of Chinese university students found that students were at the highest risk of developing PTSD and depression symptoms during the Corona outbreak⁽¹⁶⁾. Various investigations focused on Bangladeshi university students consistently found a high prevalence of negative mental outcomes before and after the COVID-19 outbreak^(17,18). Although there is no published study which focuses only on the mental health status of Dhaka University students to the best of the author's knowledge during the conceptualization of the study, the likelihood of having common mental issues among Dhaka University students is very high even before the COVID-19 period because depression, anxiety, and stress peak in early adulthood around the age of 25, making university students an incredibly vulnerable group⁽¹⁹⁾. There is also no current evidence of mental health associations with or during the COVID-19 pandemic in Dhaka University's general students to the best of the author's knowledge. During this stage, exploratory research of mental health status and associated factors are critical to preventing future negative mental health consequences. This investigation would fill the void by presenting relevant data on university students' psychological states during the epidemic and dealing with these types of situations in any potential pandemic situation. These considerations serve as a reference for the current research, which aims to determine the current mental health status of university students.

We chose to conduct the survey with the students of Dhaka University as it is one of the largest universities in Bangladesh. The results of the study can be used to develop psychological approaches to improving the mental health conditions of Dhaka University students. This study aimed to determine the effect of COVID-19 on the mental health of Dhaka University students. This study was conducted in an attempt to address the mental health conditions of Dhaka University students with the following research questions:

1. What is the amplitude of depression, anxiety, and stress among the students of Dhaka University during the COVID-19 outbreak?
2. What are the factors associated with depression, anxiety, and stress among Dhaka University students during the COVID-19 outbreak?

Materials and Methods

A cross-sectional survey design was followed to conduct the study. Using a convenient sampling method, 193 students (94 males and 99 females) of Dhaka University were chosen as participants for this study. Males accounted for 48.7% of the participants, while females accounted for 51.3%. Data was collected between 01 December 2020 and 31 December 2020. Because of the epidemic, all the data of the study were gathered via an online survey link by posting it on Dhaka University-based student online platforms. The procedure for gathering the data was in accordance with the CHERRIES (Checklist for Reporting Results of Internet E-surveys) standard⁽²⁰⁾. All the methods used in this study adhere to the ethical guidelines established by the Helsinki Declaration of 1975, as amended in 2008. All the procedures involving human participants were approved by the Research Ethics Committee, Department of Educational and Counselling Psychology, University of Dhaka, Bangladesh (DECP/09/09). The study consisted of 33 closed-ended questions that took approximately 8-10 minutes to complete. The survey was divided into three sections: demographic questions (6 items), health-related queries with respect to COVID-19 (6 items), and mental health status-related questions (21 items). Socio-demographic information was gathered on age range, gender, education, marital status, hall status of the university (residential/non-residential) and status of the current living area (whether or not there is anyone who is infected with coronavirus in the immediate vicinity of the participant's current living area). Health-related queries with respect to COVID-19 were clear with choices to decide for answers, for example, 'one's sleeping condition during COVID-19 period' with answer choices- 'decreased', 'remain same' and 'increased'. The other five questions were similar in nature and they were about concentration, hunger, enthusiasm, mental condition and confidence during the COVID-19 period with similar options. The mental health status of the participants was assessed using an adapted Bangla version of the Depression, Anxiety, and Stress Scale-21 (DASS-21)⁽²¹⁾. The DASS-21 is a collection of three self-report scales (stress, anxiety, and depression) that include a total of 21 items⁽²²⁾.

Each sub-total scale's score will fall into one of five categories: average, mild, moderate, severe, and extremely severe. It's a four-point Likert scale based on the activities of the most recent week. The DASS has proven to be a reliable and important instrument for assessing the emotional well-being of Bangladeshis⁽²³⁾. The DASS-21 demonstrated satisfactory inner consistency with a Cronbach's alpha score of 0.92⁽²⁴⁾. During the COVID-19 outbreak^(1, 25), as well as the SARS outbreak⁽²⁶⁾, the DASS-21 was used to determine the mental health status of the general populace. Data were analyzed by using IBM SPSS Statistic 20.0.

Results and Discussion

A total of 193 participants completed the survey. The demographic variables of the present study are presented in Table 1. The majority of participants were female (51.3%), aged 22 or more years (65.3%), studying at honors level (53.9%), unmarried (76.2%), non-residential students of university hostel (51.8%), and most participants of the study (72%) provided 'yes' response on the question whether or not there is anyone who is infected with coronavirus in the immediate vicinity of the participant's current living area.

Table 1. Description of the study population (N=193).

Parameters	N(%)
Age group	
(17-21)	67 (34.7%)
(22+)	126 (65.3%)
Gender	
Male	94 (48.7%)
Female	99(51.3%)
Education	
Honors	104(53.9%)
Masters	89 (46.1%)
Marital status	
Married	46 (23.8%)
Unmarried	147 (76.2%)
Hall status	
Residential	93 (48.2%)
Non- residential	100 (51.8%)
Any Corona virus-infected person in the immediate vicinity?	
Yes	139 (72%)
No	54(28%)

Descriptive statistics were used to show the magnitude of depression, anxiety and stress among the students of Dhaka University during the COVID-19 period. It was found that 51.8 % of students reported mild to extremely severe stress levels, 64.2 % of students reported mild to extremely severe anxiety levels, and 66.2% of students reported mild to extremely severe depression levels (Fig. 1). Our findings indicate a greater prevalence rate

of anxiety and depression levels in comparison to countrywide research of adult mental health in Bangladesh during the COVID-19 period⁽²⁷⁾. Our findings are also consistent with a study conducted with Bangladeshi college and university students during the COVID-19 period⁽²⁸⁾ as well as a survey conducted with the general public in China during the early stages of the pandemic⁽¹⁾.

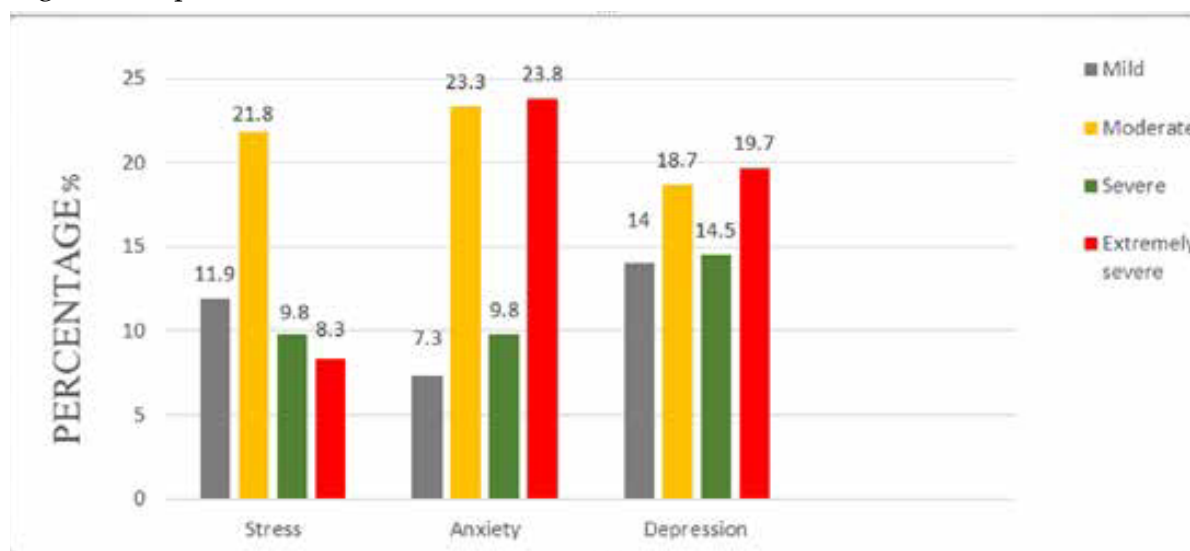


Fig. 1. The percentage of various levels of stress, anxiety, and depression of the participants (n = 193).

Our findings suggest that 18.1% of participants experienced severe to extremely severe stress while 33.6% of participants experienced severe to extremely severe anxiety, both of which could have substantial psychological implications on students’ mental health. And, 34.2% of participants experienced severe to extremely severe depressive symptoms.

Chi-square was used to see the association between depression, anxiety and stress responses with demographic variables and health-related queries. A P value less than 0.05 was considered statistically significant for determining the association between variables. Table 2 displays a statistically significant association between age and depression subscale scores on the DASS-21 ($\chi^2 (2) > = 14.179, p = .007$), suggesting that students aged 22 and up (68.1%) are more prone to depressive symptoms which are somehow in line with the findings of another global study that finds early onset of depression among young adults before the age of 25⁽²⁹⁾. That population may be at risk for depression as a result of cumulative unpleasant experiences during the pandemic, such as negative life events occurring at the same time or toxic familial settings⁽³⁰⁾. Students living in residential halls (74.2%) were also shown to have significantly higher anxiety scores on the DASS-21 anxiety subscale scores ($\chi^2 (2) > = 10.001, p = .040$) which are consistent with the findings of another Bangladeshi study with university students that finds that living with families after a long period since residential halls were closed during the epidemic, less physical activities, and the dread of falling behind classmates academically all contribute to provoking this form of anxiety⁽³¹⁾.

Table 2. Prevalence of stress, anxiety, and depressive symptoms (mild to extremely severe) across sociodemographic variables (N= 193)

Variables	% Stress	% Anxiety	% Depression
Age group			
(17-21)	55.2	61.2	64.2*
(22+)	50.0	65.9	68.3
Gender			
Male	47.9	62.8	68.1
Female	55.6	65.7	65.7
Education			
Honors	51.0	65.4	66.3
Masters	52.8	62.9	67.4
Marital status			
Married	52.2	63.0	60.9
Unmarried	51.7	64.6	68.7
Hall status			
Residential	55.9	4.2*	71.0
Non- residential	48.0	55.0	63
Any Corona virus infected person in the immediate vicinity?			
Yes	51.1	65.5	68.3
No	53.7	61.1	63.0

* P-value < 0.05.

Other socio-demographic variables including gender, marital status, education, university, and additional question about the participant's current living area had no significant association with DASS-21 subscale scores. A big number of participants were found to decrease their sleep (44.6%), hunger (46.1%), and enthusiasm level (45.6%) respectively than previous times during the COVID-19 period while another big number of people remained the same as in previous time in their attention (49.7%), self-confidence pattern (43%) (Table 3).

On the contrary, Table 4 shows that sleep-related queries concerning COVID-19 were found to be statistically significant with DASS-21 anxiety subscale scores ($\chi^2 (2) > = 24.135$, $p = .002$). COVID-19-related questions on attention, enthusiasm, mental state, and self-confidence were also associated with depressive symptoms, anxiety symptoms, and stress levels in a significant way. Our findings are in agreement with global studies that reveal depression, anxiety, and stress are connected with altered sleep patterns, decreased enthusiasm, and less sensitivity to everyday situations due to poor attention and lack of self-confidence^(32,33).

Table 3. Description of health-related queries with respect to COVID-19 (N=193)

Parameters	N(%)
Sleep	
Decreased	86(44.6)
Remain same	84 (43.5)
Increased	23(11.9)
Attention	
Decreased	56(29)
Remain same	96 (49.7)
Increased	41(21.2)
Hunger	
Decreased	89(46.1)
Remain same	75(38.9)
Increased	29(15)
Enthusiasm	
Decreased	88(45.6)
Remain same	77 (39.9)
Increased	28(14.5)
Mental state	
Decreased	63(32.6)
Remain same	90(46.6)
Increased	40(20.8)
Self-confidence	
Decreased	78(40.4)
Remain same	83 (43)
Increased	32(16.6)

Because the DASS 21 scale is independent of events, it's difficult to conclude that COVID-19 is alone causing these depression symptoms, anxiety, or stress, but these findings should be brought into the focus of Dhaka University authority. As, participants had reported these symptoms during the COVID-19 period and they also had reported a decrease in their sleep, hunger, and enthusiasm level during the COVID-19 period than the previous time, it can be said that COVID-19 is somehow responsible for that kind of psychological state of Dhaka University students. The study has several drawbacks. Due to a lack of time, it was conducted on a pilot basis with 193 individuals; however, a larger number of participants might be used in this study. Another disadvantage is that self-reported sleep, attentiveness, hunger, enthusiasm, mental state, and self-confidence may not always reflect the assessments by professionals.

Table 4. Prevalence of stress, anxiety, and depressive symptoms (mild to extremely severe) across health-related queries with respect to COVID-19 (N=193)

Queries	Stress (%)	Anxiety (%)	Depression (%)
Sleep			
Decreased	51.2	66.3*	65.1
Remain same	53.6	67.9	43.5
Increased	47.8	43.5	65.2
Attention			
Decreased	25**	37.5**	35.7**
Remain same	49	68.7	70.8
Increased	95.1	90.2	100
Hunger			
Decreased	53.9	67.4	68.5
Remain same	50.7	60.0	65.3
Increased	48.3	65.5	65.5
Enthusiasm			
Decreased	34.9**	50.0**	47.7**
Remain same	58.4	68.8	76.6
Increased	89.3	96.4	100
Mental state			
Decreased	33.3**	46.0 **	39.7**
Remain same	47.3	65.9	71.4
Increased	92.3	89.7	100
Self-confidence			
Decreased	35.9 **	53.8**	43.6**
Remain same	50.6	63.9	75.9
Increased	93.7	90.6	100

* P-value < 0.05, ** P-value < .001.

The findings of the study may be useful in overcoming negative psychological effects and ensuring the mental health of Dhaka University students. The conclusions of this study may be beneficial for future research on the psychological aspects of Dhaka University students.

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