

## Psychological Distress among Bangladeshi Adults during the Covid-19 Pandemic: A Cross-sectional Study

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**ABSTRACT** The world community including Bangladesh is doing its best to control COVID-19 but its effects on mental health are not being adequately addressed. This study aimed to investigate the psychological distress of COVID-19 among Bangladeshi adults. This cross-sectional study is conducted from 10 to 20 April, 2020, through an online survey and 320 samples were selected by simple random sampling. The frequency distribution revealed that 23.8 percent, 30.9 percent and 45.3 percent of the respondents were suffering from low, moderate, and high levels of psychological distress. Male, professions other than service and housewife, and large family size were the most influential predictors of psychological distress. This study revealed that the psychological impact of the COVID-19 pandemic was remarkably significant in Bangladesh and it might emerge as a serious public health concern. The country should prepare and realize guidelines for psychological crisis management in this regard.

### INTRODUCTION

The Coronavirus disease 2019 (COVID-19) emerged as a highly infectious outbreak in Wuhan City of China at the end of 2019 and rapidly spread to other countries. The World Health Organization (WHO) declared it a 'Public Health Emergency of International Concern and a pandemic' (WHO 2020a,b). The numbers of cases and deaths have been increasing every-day and as of September 26, 2020, the disease caused 32,822,128 confirmed infections and 994,503 deaths in 215 countries and territories (Worldometer 2020).

The effects of epidemics or pandemics are multi-faceted complex events that encompass both physical and mental disorders as well as various social and interpersonal problems during and after the outbreak (Norris et al. 2002). The number of mentally affected people crosses the

number of people affected by the epidemic itself, and mental health problems may last longer than the epidemic and the psychosocial and economic impacts can be incalculable (Reardon 2015; Shigemura et al. 2020). In light of the experience of previous outbreaks, researches apprehend that the impact of the COVID-19 pandemic on global mental health might also be extensive and long-lasting (Kang et al. 2020). During epidemics/pandemics, a huge number of infections and deaths in a very short period, inadequate healthcare facilities, the fall of the economy, and shortage of supplies create panic among the general population (Miller 2006). Fear also arises when social distancing, isolation, and quarantine are imposed as measures of control of epidemics (Weiss and Ramakrishna 2020). During and after epidemics and pandemics, regardless of exposure, most people experience panic and anxiety of being sick and dying, helplessness, sadness, loneliness, fear, nervousness, anger, and many other psychological mediators arise in association with quarantine, isolation, social distancing, and social and economic fallout ultimately resulting in defined mental health problems (Cheung et al. 2008; Hall and Chapman 2008; Douglas et al. 2009; Xiang et al. 2020; Ahorsu

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et al. 2020; Banerjee 2020). The psychological impacts include depressive illness, stress and anxiety, panic attacks, psychosomatic disorders, PTSD, delirium, psychosis, and suicide (Hall and Chapman 2008; Müller 2015; Tucci et al. 2017).

The world is now busy with the immediate tasks of treatment, control, and prevention of COVID-19 and many countries like Bangladesh cannot pay adequate attention to its psychosocial consequences, though in the meantime, a good number of studies have found significant psychological impacts of the COVID-19 pandemic among the general population. Some studies are available now which focused on psychological effects and correlates of COVID-19. A recent study explored that physical distancing, quarantine, unemployment, and death or illness had negative and media campaigns and global community sense had a positive impact on mental health during the COVID-19 pandemic (Sritharan and Sritharan 2020). Several other studies reported moderate to severe psychological impact in the form of anxiety, stress, depression, insomnia, and so on (Li et al. 2020; Qiu et al. 2020; Rossi et al. 2020; Wang et al. 2020a; Wang et al. 2020b).

Bangladesh identified its first confirmed case of COVID-19 on 8 March, 2020. Since then, the number has continued to increase and as of 26 September, 2020, the country recorded a total of 357,873 confirmed cases and 5,129 deaths (DGHS 2020). But the country has not paid attention yet to the psychological impacts of the outbreak among the general population. The government has not included mental health issues in its plan of combating the COVID-19 outbreak (NPRPCB 2020). Also, COVID-19-related studies are scanty in Bangladesh. A few studies have assessed the knowledge, attitude, practice, and perception toward COVID-19 among students and adults in Bangladesh (Farhana and Mannan 2020; Wadood et al. 2020a; Wadood et al. 2020b). A paper studied a case of COVID-19-triggered suicide and xenophobia (Mamun et al. 2020). Another study focused on COVID-19-related challenges in Bangladesh (Anwar et al. 2020). A web-based study was conducted on depression and anxiety among university students (Islam et al. 2020a). Another online pilot survey was done on panic and generalized anxiety among Bangladeshi people (Islam et al. 2020b). Another study was done on the impact

of COVID-19 on the mental health of children (Yeasmin et al. 2020). So far no study has yet been done on psychological distress among the general adult population in Bangladesh during the COVID-19 pandemic. To fill up the gap, the researches aimed to assess the level of psychological distress among the Bangladeshi adult population during the COVID-19 pandemic and investigate the risk factors associated with it.

### Research Questions of this Study

There are two research questions in this study:

(a) what is the prevalence of psychological distress among the adult population in Bangladesh during the COVID-19 pandemic?

(b) what are the associated factors of the psychological distress among the adult population during the COVID-19 pandemic in Bangladesh?

This study was designed to rapidly assess the mental health situation in Bangladesh during the COVID-19 pandemic thereby helping the government and other concerned stakeholders pay due attention to the issue and undertake immediate and appropriate measures. This study was an early assessment of the mental health situation after the outbreak.

## METHODOLOGY

### Study Design and Population

This was a cross-sectional study and Bangladeshi adults were the study population. The researchers collected data from 10-20 April, 2020. During the period, the lockdown was imposed by the government, and physical distancing, staying home, avoiding crowds, and isolation/quarantine were being maintained. As the face-to-face interview was not feasible, an online survey was used for the study.

### Sample Size Determination

The mathematical formula  $n = \frac{z^2 p (1-P)}{d^2}$  was used to calculate the sample size for this study, where n is the number of samples, z is the value from the standard normal distribution for the selected confidence level (considered z=1.96 for 95% confidence level), p=the proportion of

the prevalence=0.50 (50.0 % was the assumed highest population proportion prevalence for psychological distress from COVID-19), and  $d$ =the margin of error = 0.05. The formula delivered that 384 samples would be sufficient for this study. However, a total of 400 samples were selected assuming a 96 percent participation rate.

### Sampling Technique

For selecting samples, researchers first collected 154 email addresses, 286 Facebook IDs, and 110 WhatsApp numbers of Bangladeshi residents from colleagues, friends, and students. It was ascertained that the selected people were of at least 18 years old, encompassing both genders and different socio-economic status, living in different geographical locations in Bangladesh, and not suffering from any diagnosed mental problems before the outbreak. A total of 400 samples were selected using a simple random sampling (by lottery) method for this study.

### Questionnaire

For collecting data, researcher used a self-administered semi-structured questionnaire that had two parts: (i) the first part included questions and statements regarding general, anthropometric, demographic, and socioeconomic information of the participants, and (ii) the second part included six questions of the Kessler Psychological Distress Scale-6 (K-6) to know the psychological state of the participants. First, the questionnaire was drafted in English and translated in Bangla (mother tongue of Bangladesh) to make it easily understandable for the participants. Researchers could not conduct a pilot survey for the shortage of budget and time. The Cronbach Alpha value (0.792) showed that the internal consistency (reliability) of the questionnaire was higher than the acceptance level (good).

### Data Collection

Soft copies of the questionnaire were sent to the selected 400 samples through e-mail, Facebook, and WhatsApp devices. A total of 356 participants sent back filled-up questionnaires with their written consent. The rate of participation was 89.0 percent. However, 36 questionnaires

were discarded for incompleteness and finally, 320 questionnaires were available for analysis.

### Outcome Variable

The level of psychological distress among the adult population in Bangladesh during the COVID-19 pandemic was the outcome variable for this study.

### Measurement of Psychological Distress

Researchers used the Kessler 6 Scale (K-6) for measuring psychological distress among the participants (Dadfar et al. 2018). It is the shortened version of the Kessler Psychological Distress Scale (K-10) that was used as an effective tool in population surveys in many countries including non-Western countries (Kessler et al. 2002; Min and Lee 2015). Both K-10 and K-6 were validated as equally sensitive and specific tools (Cornelius et al. 2013; Dadfar et al. 2018). Based on K-6, a five-point Likert scale (i) none of the time, (ii) a little of the time, (iii) some of the time, (iv) most of the time, and (v) all of the time was used to measure the levels of psychological distress and these five levels were assigned to 0, 1, 2, 3, and 4 points respectively. The assigned points of each of the six responses of the participants were then added to get the total score that ranged from 0 to 24. Based on the total scores, the level of psychological distress was classified as (i) Low (0-7 scores), (ii) Moderate (8-11 scores), and (iii) High (12-24 scores). For further analysis, psychological distress was categorized into two groups: (i) Low-Moderate (0-11 scores) and (ii) High (12-24 scores).

### Independent Variables

Some demographic and socio-economic factors were considered as independent variables for investigating their associations with psychological distress. The variables were age (younger adult: 18-30 years, middle-aged: 31-50 years, older adult:  $\geq 51$  years), gender (male, female), residence (urban, rural), type of family (nuclear, joint), education level (no education, primary, secondary, higher), occupation (service, housewife, others), marital status (married, unmarried, others), family's economic status (low: monthly income-  $\leq 20000$  Taka, middle: monthly

income-20001-30000 Taka, high: monthly income->31000 Taka), and family members (1-3 members, 4 members, 5 members, ≥6 members).

### Statistical Analysis

In this study, the frequency distribution was used to determine the frequency of sample characteristics and the prevalence of psychological distress. The chi-square test was used to identify the associated factors of psychological distress. The binary logistic regression model was applied to examine the effect of the associated factors on psychological distress. Only the associated factors statistically significant (p-value <0.05) in bivariate analysis were considered as independent variables for the logistic regression model. Both crude odds ratio (cOR) and adjusted odds ratio (aOR) with 95% confidence intervals (CI) for significance testing was used for logistic regression analysis. All statistical analyses were carried out using SPSS (IBM Version 22.0).

## RESULTS

### Sample Characteristics

A total of 320 respondents took part in this study. Their mean and median ages were 40.99 (standard deviation=14.99) years and 42.00 years respectively. Of them, 64.4 percent were male and 35.6 percent were female, and 60.0 percent and 40.0 percent came from urban and rural areas respectively. Near about three-fourth (72.5%) of the respondents were currently married, 30.6 percent younger adults, 42.5 percent middle-aged, and 26.9 percent older adults and 60.6 percent were highly educated. More than 78.0 percent of participants were living in nuclear families and 40.0 percent came from families of ≤4 members. About 32.0 percent and 43.4 percent of respondents belonged to high- and low-income families respectively and 32.8 percent of participants were service holders. The detailed characteristics of the participants were shown in Table 1.

### Frequency Distribution of the Participants' Responses to K-6 Questions

Six questions of K-6 were used to measure the psychological distress of COVID-19 among

**Table 1: Characteristics of the participants**

Variable	Category	Frequency, N (%)
Age	Younger adult: 17-30 Years	98 (30.6)
	Middle-aged: 31-50 years	136 (42.5)
	Older adult: 51 and above	86 (26.9)
Gender	Male	206 (64.40)
	Female	114 (35.60)
Residence	Urban	192 (60.0)
	Rural	128 (40.0)
Type of Family	Nuclear	250 (78.10)
	Joint	70 (21.90)
Marital Status	Married	232 (72.5)
	Unmarried	80 (25.0)
	Others	8 (2.5)
Family Members	1-3 members	43 (13.4)
	4 members	128 (40.0)
	5 members	71 (22.2)
	≥6 members	78 (24.4)
Family's Economic Status	Low: Monthly income ≤20,000 Taka	139 (43.4)
	Middle: Monthly income -20001-30000 Taka	80 (25.0)
	High: Monthly income ≥30001 Taka	101 (31.6)
Education	No education	19 (5.9)
	Primary	34 (10.6)
	Secondary	73 (22.8)
	Higher	194 (60.6)
Occupation	Service	105 (32.8)
	Housewife	63 (19.7)
	Others (students, labors, health professionals, retired, unemployed, and others)	152 (47.5)

Bangladeshi adults. The frequency distribution of the participants' responses to the K-6 questions was presented in Table 2.

### Prevalence of Psychological Distress

The frequency distribution revealed that 23.8 percent, 30.9 percent and 45.3 percent of the respondents were suffering from low, moderate, and high levels of psychological distress. However, in two categories, the prevalence of low-moderate and high psychological distress was found to be 54.7 percent and 45.3 percent respectively (Table 3).

**Table 2: Frequency distribution of the participants' responses to K-6 questions**

Questions: During the last 30 days, about	None of the time N (%)	A little of the time N (%)	Some of the time N (%)	Most of the time N (%)	All of the time N (%)
1. How often did you feel nervous?	36 (11.3)	35 (10.9)	100 (31.3)	80 (25.0)	69 (21.6)
2. How often did you feel hopeless?	56 (17.5)	39 (12.2)	93 (29.1)	67 (20.9)	65 (20.3)
3. How often did you feel restless or fidgety?	96 (30.0)	62 (19.4)	128 (40.0)	31 (9.7)	3 (0.9)
4. How often did you feel that everything was an effort?	187 (58.4)	55 (17.2)	53 (16.6)	15 (4.7)	10 (3.1)
5. How often did you feel so sad that nothing could cheer you up?	88 (27.5)	66 (20.6)	93 (29.1)	49 (15.3)	24 (7.5)
6. How often did you feel worthless?	24 (7.5)	31 (9.7)	87 (27.2)	58 (18.1)	120 (37.5)

**Table 3: Prevalence of psychological distress among Bangladeshi adults during the COVID-19 pandemic**

Psychological distress	Percentage	Cumulative percentage
Low	23.80	23.80
Moderate	30.90	54.70
High	45.30	100.0

**Associated Factors of Psychological Distress**

The bivariate model (chi-square test) showed that, out of the selected demographic and socio-economic factors, gender, family members, and occupation were significantly ( $p < 0.05$ ) associated with psychological distress (Table 4). Table 4 shows that 50.0 percent of male and 36.8 percent of female participants developed psychological distress. Participants coming from 5-membered families were the worst sufferers of psychological distress (64.8%) followed by 1-3-membered families (44.2%), 4-membered families (40.6%), and  $\leq 6$ -membered families (35.9%). The level of psychological distress was found to be higher (53.9%) among the respondents of others profession than those of service (39.0%) and housewife (34.9%). Age, residence, marital status, type of family, and education showed no significant association with psychological distress (Table 4).

**Effect of the Associated Factors on Psychological Distress**

The associated factors found statistically significant ( $p$ -value  $< 0.05$ ) in the chi-square test

were included in the binary logistic regression analysis to see their effect on psychological distress. Table 5 presents both cOR and aOR results regarding the influential predictors of psychological distress. When the other variables were controlled, adults from  $\geq 6$  membered families had higher odds of high psychological distress than those of 1-3-membered families (aOR=2.167; 95% CI: 0.987 - 4,757;  $p < 0.05$ ). However, if not controlled, respondents of 5-membered families showed more likelihood of having high psychological distress than subjects from 1-3-membered families (cOR=2.324; 95% CI: 1.072 - 5.041;  $p < 0.05$ ). It was found that families having  $\geq 6$  members were at a higher risk of developing high psychological distress. Respondents of others profession (students, labors, health professionals, retired, unemployed and others) showed a higher vulnerability to high psychological distress compared to service-holders (cOR=1.829; 95% CI: 1.103 - 3.031;  $p < 0.05$  and aOR=1.858; 95% CI: 1.101 - 3.136;  $p < 0.05$ ). Males had higher odds of high psychological distress than females when other variables were not controlled (cOR=0.583; 95% CI: 0.365 - 0.932;  $p < 0.05$ ). The finding was the same when other variables were controlled but the result did not reach statistical significance (aOR=0.630; 95% CI: 0.330 - 1.205;  $p > 0.05$ ) (Table 5).

**DISCUSSION**

Any sudden epidemic or pandemic inevitably causes psychological problems (Wang et

**Table 4: Association of demographic and socioeconomic factors with psychological distress among Bangladeshi adults during the COVID-19 pandemic**

<i>Variables with categories</i>	<i>Major psychological distress, N (%)</i>	<i>Minor psychological distress, N (%)</i>	<i>χ<sup>2</sup>-value</i>	<i>p-value</i>
<i>Age</i>			0.957	0.632
Younger adult	48 (49.0)	50 (51.0)		
Middle-aged	61 (44.9)	75 (55.1)		
Older adult	36 (41.9)	50 (58.1)		
<i>Residence</i>			0.210	0.731
Urban	85 (44.3)	107 (55.7)		
Rural	60 (46.9)	68 (53.1)		
<i>Gender</i>			5.127	0.026
Male	103 (50.0)	103 (50.0)		
Female	42 (36.8)	72 (63.2)		
<i>Marital Status</i>			1.631	0.443
Married	101 (43.5)	131 (56.5)		
Unmarried	41 (51.2)	39 (48.8)		
Others	3 (37.5)	5 (62.5)		
<i>Type of Family</i>			0.038	0.892
Nuclear	114 (45.6)	136 (54.4)		
Joint	31 (44.3)	39 (55.7)		
<i>Family Members</i>			14.816	0.002
1-3 members	19 (44.2)	24 (55.8)		
4 members	52 (40.6)	76 (59.4)		
5 members	46 (64.8)	25 (35.2)		
≥6 members	28 (35.9)	50 (64.1)		
<i>Education</i>			3.768	0.285
No education	6 (31.6)	13 (68.4)		
Primary	19 (55.9)	15 (44.1)		
Secondary	36 (49.3)	37 (50.7)		
Higher	84 (43.3)	110 (56.7)		
<i>Occupation</i>			8.982	0.011
Service	41 (39.0)	64 (61.0)		
Housewife	22 (34.9)	41 (65.1)		
Others	82 (53.9)	70 (46.1)		
<i>Monthly Family Income</i>			0.204	0.916
≤20,000 Taka	61 (43.9)	78 (56.1)		
21,000-30,000 Taka	37 (46.2)	43 (53.8)		
≥31,001 Taka	47 (46.5)	54 (53.5)		

al. 2020a), and the effects may be long-lasting (Kang et al. 2020). It necessitates immediate and appropriate mental health management measures following a rapid assessment of the actual situation. Researchers designed and conducted the current study considering this necessity in Bangladesh where like India and Nepal, the psychological problems are not given due and timely importance (Koirala et al. 2020) and tried

to rapidly assess the psychological impact of the outbreak and investigate the associated factors among the adult population just after the early stage of the outbreak in the country. Researchers were conscious that the psychological distress found in this study might not be considered as diseases, rather these were immediate responses of the participants to a newly emerged unanticipated condition (COVID-19 pandemic). However, researchers could not also neglect them because, over time, some of the problems might ultimately develop disease especially in the case of prolonged exposure.

The respondents participating in this study had no previously-diagnosed mental disorder. After the emergence of the COVID-19 outbreak, as this study revealed, 45.3 percent of them developed high psychological distress and needed interventions. The findings of many other previous studies support this finding. At the initial phase of the pandemic in China, 53.8 percent of subjects reported moderate to severe psychological impact of COVID-19 (Wang et al. 2020a). Another Chinese survey revealed that about 35 percent of people developed mental problems during the outbreak (Wang et al. 2020b). According to a study conducted in India at the early stage of the pandemic, more than 80 percent of the general population was suffering from psychological problems (Roy et al. 2020). Another Indian study found 15 percent mild, 5.5 percent moderate, and 12.7 percent severe psychological impact of COVID-19 in the community (Varshney et al. 2020). In Ethiopia, a study found 45.1 percent of low, 29.4 percent of moderate, 17.6 percent of high, and 7.3 percent of very high psychological distress among the general population (Ambelu et al. 2020). A daily newspaper reported that the National Mental Health Survey of Bangladesh (NMHSB) 2018-19 found 16.8 percent of the Bangladeshi adult population had mental diseases before the COVID-19 pandemic (NEWAGE 2019). A recent online pilot survey reported 37.3 percent of people developed generalized anxiety during the COVID-19 pandemic in Bangladesh (Islam et al. 2020b). Another perception-based study found that 85.6 percent of Bangladeshi people suffered from COVID-19-related psychological distress (Islam et al. 2020c). The findings of all these studies prove that the prevalence of high

**Table 5: Effect of the associated factors on psychological distress among Bangladeshi adults during the COVID-19 pandemic**

<i>Variables</i>	<i>cOR (95% CI)</i>	<i>aOR (95% CI)</i>
<i>Gender</i>		
Female versus Male <sup>R</sup>	0.583 (0.365 - 0.932)*	0.630 (0.330 - 1.205)
<i>Family Members</i>		
4 versus 1-3 members <sup>R</sup>	0.864 (0.430 - 1.736)	1.471 (0.680 - 3.182)
5 versus 1-3 members <sup>R</sup>	2.324 (1.072 - 5.041)*	1.249 (0.687 - 2.268)
≥6 versus 1-3 members <sup>R</sup>	0.707 (0.331 - 1.511)	3.187 (1.607 - 6.320)*
<i>Occupation</i>		
Housewife versus Service <sup>R</sup>	0.838 (0.437 - 1.604)	1.291 (0.545 - 3.056)
Others versus Service <sup>R</sup>	1.829 (1.103 - 3.031)*	1.858 (1.101 - 3.136)*

cOR- Crude Odds Ratio; aOR- Adjusted Odds Ratio; CI- Confidence Interval; \*- p-value<0.05;  
R- Reference

psychological distress was found in this study are justified. Massive media campaigns about the high infectivity and fatality of the disease and publicity of misinformation might create a higher level of psychological impact on the respondents. Disruption of daily life, social functioning and educational, official, and business activities, and fear of losing jobs and earnings might take a high toll on the mental wellbeing of the general population (Shang et al. 2020). The preventive measures like social distancing, staying home, quarantine and isolation might have created a sense of physical and mental detachment from relatives, friends, and the society that might push the people to lose confidence in life ultimately triggering psychological distress in them (Hawryluck et al. 2020; Jeong et al. 2016). Specific types of family and social bonding, and religious and cultural traditions and faiths might also play a role in increasing psychological distress.

In this study, higher odds of the likelihood of COVID-19-related high psychological distress were found among males, bigger family members, and people of other professions like students, laborers, health professionals, unemployed, and retired persons. Males, students, laborers, and health professionals are usually engaged in works and duties outside the home and more exposed to the risk of infection. In addition to fear of being infected, the uncertainty of study due to the continued closure of educational institutions from the very beginning of the outbreak might have created an extra burden of worry and stress for the students. This situation was supported by a study that reported the Chinese students showed

a significant association with the impact of COVID-19 on mental health (Zhai et al. 2020). Like the Bangladeshi respondents of this study, the Mexican population showed a higher rate of psychological distress among big family members (Ramírez et al. 2020). Members of bigger families are more sensitive to their wellbeing and at a higher risk of being infected as it is hard for them to follow preventive measures such as physical distancing. These situations might create stress, tension, and anxiety ultimately triggering psychological impact among them (Brooks et al. 2020). Bigger families are usually joint families, and in this study, though not statistically significant, joint family members were found to have high psychological distress in greater numbers (55.7%) than nuclear family members. Bigger families need bigger budgets for managing daily requirements and as the COVID-19 pandemic creates a financial crisis for most of the families, this might contribute to increased psychological distress among them. In support of this finding, Ethiopian males and health workers were found to have higher rates of psychological distress (Ambelu et al. 2020). A Chinese study also found higher rates of mental problems among health professionals during the COVID-19 pandemic (Zhang et al. 2020). However, contrary to the present findings, females had higher rates of psychological distress in Indian, Saudi Arabian, and Italian populations (Varshney et al. 2020; Al-Hanawi et al. 2020; Mazza et al. 2020). A French study found that women and unemployed were more vulnerable to get psychological distress (Chaix et al. 2020).

In this study, researchers presented the prevailing empirical evidence of the psychological distress of Bangladeshi adults during the Covid-19 pandemic. The findings showed that a significantly remarkable number of Bangladeshi adults developed high psychological distress during the COVID-19 pandemic and some demographic and socioeconomic factors were associated with it. Related literature suggest that the prevalence and level of psychological distress and the predictors differ across countries and groups of population based on their respective social, religious, cultural, political, and environmental factors (Mijiritsky et al. 2020). Country-wide research is needed to assess mental health and its predictors in individual countries to effectively identify the most vulnerable groups of the population during the Covid-19 pandemic. Bangladesh is no exception, and this study provided the groundwork for further research in this sector.

To the researchers' knowledge, this was the first attempt to study the psychological distress among the adult population in Bangladesh during the COVID-19 pandemic. A validated and highly sensitive and specific scale was used to measure psychological distress in this study. Appropriate statistical models were also applied for data analysis. However, there were some limitations too. Though the samples were collected from all over the country from all sections of people, it was not nationally representative in the true sense because only the adults accustomed to email, Facebook, and WhatsApp devices could take part in the study. Secondly, due to lockdown and instructions of staying home and maintaining physical distancing, proper sampling and data collection techniques could not be followed. Thirdly, the self-reported information of the respondents might be biased and exaggerated. Further research is required to examine mental health and psychological distress among different groups of population in the country during the pandemic with larger and nationally representative data and using many other validated instruments.

### CONCLUSION

The aim of this study was to assess psychological distress among Bangladeshi adults during the COVID-19 pandemic and identify the associated factors. A total number of 320 Bangladeshi

adults currently living at different locations in the country were considered as samples for this study. Based on the objectives, frequency distribution, chi-square test, and logistic regression models were used in this study for the analysis of data. It was found that 45.3 percent of the adults had high psychological distress, and the male gender, professions other than service and housewife, and large family size were the most influential predictors.

### RECOMMENDATIONS

This is the prime time to address the issue of mental health in Bangladesh without any delay. Firstly, Bangladesh must recognize the psychological impact of the COVID-19 pandemic as a public health concern and include the issue in its national plan of combating COVID-19. Secondly, the country must promulgate principles, fix short and long-term targets, and issue guidelines for psychological crisis management during and after the outbreak. Thirdly, psychiatric and psychological institutions and professionals should operate platforms to strengthen mental health initiatives and provide psychological guidance to the government as well as the general people with special focus on the identified vulnerable groups. Fourthly, all measures should be practical and viable in terms of social tradition, cultural values, and economic capability.

### LIMITATIONS

The main limitation of this study was that only respondents who were available online were considered as sample because people come from different socioeconomic status and not all people are connected through social media. This was a cross sectional study, it was not possible to study the change of psychological distress among Bangladeshi adults of all social strata during the covid-19 pandemic. In this study, the researchers considered only socio-economic, demographic and behavioral factors, some important factors such as biochemical factors were not considered. The researchers recruited only adults (age $\geq$ 18 years) but need to investigate psychological distress among adolocents and all levels of students in Bangladesh. More research is required regrading psychological distress among Bangladeshi people.



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