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RESEARCH PAPER

Mental Health Status Of A Population During COVID-19 Pandemic in Bangladesh: A Cross-Sectional Study

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Abstract

Background: The current Pandemic situation has the potential to impact mental health unfavourably. As a by and large new infection, much still needs to be had some significant awareness of Coronavirus. Following openness to the SARS-CoV-2 infection contamination, the vast majority of the people stay asymptomatic or foster gentle indications. Coronavirus cases can make complexities that will require hospitalization.

Objective: Coronavirus patients revealed conditions like intense respiratory pain disorder, cardiovascular breakdown, liver diseases, renal impairment, shock, and multiorgan disappointment. During the current Coronavirus pandemic, general clinical issues have pulled in more highlight. Diverged from that, the psychological wellness outcomes of Coronavirus pandemic have gotten less thought.

Methods: This study will follow a cross-sectional study aimed to determine the prevalence of depression, anxiety, and stress during the initial stage of the COVID-19 pandemic among the Bangladeshi population.

Results: Self-reported information on socio-demographics, illness and mental health status was obtained predominantly. Mental health status was assessed using the Depression, Anxiety and Stress Scale (DASS-21). A total of 420 individuals participated in this study who were relatively young and highly educated. The study finding suggests that COVID-19 pandemic may increase the risk of depression, anxiety, and stress in Bangladesh. The prevalence of depression, anxiety, and stress were 46.7% (95% Confidence Interval, CI:42.1% - 51.8%), 39.1(95% CI:34.3% – 43.9%), and 34.8% (95% CI:30.2 – 39.5%), respectively. Females and individuals with physical illness are at higher risk of developing adverse psychological consequences. Gossiping with family members is protective against depression (OR: 0.5, 95% CI:0.3 – 0.7). Watching television reduces stress (OR:0.6, 95% CI:0.4-0.9). Necessary measures should be considered to improve psychological well-being during the COVID-19 pandemic.

Conclusion: To find out the mental health status of the population during COVID-19 pandemic in Bangladesh, this study finding may form a basis for the development of a mental health support strategy in Bangladesh.

Keywords: COVID-19, mental health, depression, anxiety, stress, pandemic

Introduction

A pandemic, for example, COVID-19 involving a sizeable global population seldom happens in a century.[1] Starting from Wuhan city of Hubei, China during late December 2019, the novel Coronavirus, later on, renamed as the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)progressively spread to other countries.[2] The World Health Organisation declared the COVID-19 as a pandemic on the 11th March 2020.[3]Approximately 53.1 million cases of Coronavirus have been detected globally, leaving more than 1.2 million deaths as of November 2020.[4]

As a generally new disease, much remains to be known about COVID-19. Following exposure to the SARS-CoV-2 virus infection, most of the individuals remain asymptomatic or develop mild symptoms. COVID-19 cases can create intricacies that require hospitalisation, only 2-5% precipitate death in severe cases.[5] Preliminary information available so far suggests that COVID-19 can affect multiple organs in

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a human body.[6] COVID-19 patients reported conditions such as acute respiratory distress syndrome (ARDS), heart failure, liver damage, renal failure, shock, and multiorgan failure.[7] In addition to these, SARS-CoV-2 infection's antagonistic impacts on the nervous system are also emerging.[8-9]

The SARS-CoV-2 virus is a beta coronavirus and belongs to the large corona family of viruses.[10] Notwithstanding contrasts between these Coronaviruses, there are a few similitudes as well. In the absence of a suitable vaccination program worldwide in every country and definitive treatment, interventions such as strict lockdown, social distancing, wearing a mask, and washing hands with soap water or alcohol-based hand sanitisers have been found helpful.[11] Previous SARS epidemics reported an increased risk of psychiatric symptoms including posttraumatic stress symptoms (PTSS)/posttraumatic stress disorder (PTSD), depression, and anxiety among patients with SARS-CoV-1 virus.[12-13]

During the current COVID-19 pandemic, general medical problems have pulled in more accentuation. Contrasted with that, the mental health consequences of COVID-19 pandemic have received less consideration.[14] The seriousness of the COVID-19 disease and deaths, uncertainty, vulnerability, fear, financial stress, social isolation, quarantine, and rumours are likely to have adverse effects on mental health.[14-15] Only a few studies so far revealed antagonistic mental impacts during the COVID-19 pandemic.[16-20]

Bangladesh reported the first case of Coronavirus on eight March 2020. Since then, the country has reported more than 0.4 million COVID-19 cases and 6140 related deaths.[21] To control COVID-19, the vast majority of the nations followed strict lockdown during the initial days of the pandemic.[1,14] However, Bangladesh never announceda lockdown formally. Instead, the nation noticed public holidays since 26th March 2020 for quite a long time. The larger part of individuals in the metropolitan zone kept themselves generally at home during these underlying long periods of holidays. The COVID-19 at first put tremendous pressure on the provision of health services in Bangladesh.[14] In this situation, this study reports the prevalence of depression, anxiety, and stress during the initial stage of COVID-19 pandemic among a population in Bangladesh.

The novel coronavirus 2019 (COVID-19) pandemic has spread across the world. In an effort to combat the pandemic, several countries' healthcare services have been stretched to breaking point. There is currently no reliable estimate of how much longer the COVID-19 crisis will last, but it is rest assured that many people around the globe will be affected and thus the lives of people will also be impacted.[22] As with the previous pandemics, uncertain effects on public health and wrong information regarding COVID-19 through print, broadcast, and social media may negatively affect people's mental health, including depression, anxiety, and stress.[23] Grief, anxiety, frustration, irritation, helplessness, isolation, and nervousness are the mental health sufferings that people normally will face during any pandemic crisis.[24-25] The psychological issues among the Chinese population caused by COVID-19 were assessed by several researchers and it was found that adverse impacts like despair, nervousness, and stress were present among the respondents which at the same time also increased several other risk factors and decreased their level of happiness in life.[26-28]

In Bangladesh, the COVID-19 pandemic is causing a serious mental health danger to children. A previous study has found that a good proportion of children are facing several physical and mental health issues in Bangladesh during this current pandemic.[29] Bangladesh's COVID-19 condition is deteriorating by each day. The Bangladeshi population is extremely prone to this virus due to high population density, inadequate personal hygiene standards, and economic uncertainty.[30] Recent studies advocated that mental health during the COVID-19 pandemic is related to gender, social and economic situation, income and occupation, knowledge and perceptions about COVID-19 effects, the spread of unrealistic news, and social support.[31-32] As a result, people at an older age and those with low income have the highest risk of facing severe mental health disorders.[33] When the whole world is trying to fight the current pandemic crisis and in search of an effective treatment plan for the COVID-19, somehow, the mental health issue is being ignored.[34] Moreover, most of the current researches regarding the COVID-19 pandemic have been conducted towards vaccination, control, and treatment of this COVID-19[35-36]; the psychological traits were less investigated, especially in a country like Bangladesh.[37-40]

The widespread COVID-19 pandemic caused extensive amount of anxiety, fear, and tension, which normally are the common responses to any sprouting and impulsive situation if any pandemic or crisis occurs.[41-42] Overall, COVID-19 has become a public health crisis in an international level, which created a threat to people's psychological and mental health.[32] It has also been predicted that a continuing COVID-19 crisis would have an extensive amount of considerable effect on general people's mental and psychological health.[43] Moreover, social distancing, quarantine, and self-isolation practices as preventive measures to control the spread of COVID-19 were the factors that developed anxiety and stress issues among people worldwide.[44] Several other studies also indicated that people in isolation and quarantine experienced substantial distress like anxiety, frustration, and insecurity. Thus, they suffered from severe mental and psychological distress due to COVID-19.[45-47] Even one study showed that home-quarantine and lockdown conditions could develop the symptoms of loneliness, tediousness, and anger.[48] In some studies related to the SARS epidemic, the same symptoms of depression and anxiety have been found.[49-50] Several studies on mental health and the COVID-19 crisis have found an extensive level of anxiety and depression among the general population worldwide.[51-52] It is because people are concerned about their health during such a pandemic, and this anxiety upsurges if their symptoms are similar to the current contagion.[53] Hence, it is very much expected that similar outcomes may be existent among Bangladeshi people during the current pandemic conditions.

Because of this dangerous COVID-19 outbreak, mental health issues can be prominent and severe in Bangladesh.[28, 54] In this pandemic, a contributing factor to Bangladeshis' mental health could be fear and worries[5], which could develop anxiety and depression.[54-57] This study intends to explore Bangladeshi peoples 'psychological impact and mental well-being during the COVID-19 pandemic. The study also aims to measure the incidence of psychiatric indicators and identify mental distresses which could cause helplessness and anxiety. The current pandemic has become a threat to physical health and has challenged the mental state of all people irrespective of their demographic characteristics. Thus, this study will also try to increase the concerns about the negative impacts on mental health due to the current COVID-19 pandemic.

Materials and Methods

Bangladesh Medical Research Council and Sir Salimullah Medical College Ethics Approval Committee approved the research protocol. The online questionnaire started with an information note about the research. Only those who consented proceeded to participate in the survey. To maintain confidentiality, we did not disclose any identifiable personal information of study participants.

This cross-sectional study collected online data from 30th April to 8thMay 2020, during the initial days of the COVID-19 pandemic in Bangladesh. The questionnaire was posted on a Coronavirus related page named 'CoronaBarta'on Facebook and invited its member to participate in the study. The 'Corona Barta'page was created on 16th March 2020, had approximately 3000 members, generally from Bangladesh during the data collection period. In total, 424 individuals participated in the study. None of our study population had COVID-19 during the survey. After excluding four participants, three for age under 18 and one for inconsistent data, 420 participants were included in the statistical analysis.

The survey lasted approximately ten minutes and collected self-reported information on three domains. The first part was information on sociodemographic, the second part collected data on self-reported disease profiles, and the third part collected information on depression, anxiety, and stress. The survey used the 'Depression, Anxiety, and Stress Scale-21 Items'(DASS-21) tool. The DASS-21 is a set of three self-reported scales intended to measure depression, anxiety, and stress. Scores on the DASS-21 needs to be multiplied by two to tabulate the finalscores.[58]

Data were analysed using STATA version 15 (STATA Corporation, Texas, TX, USA). Frequency tables were prepared to assess distributions of variables, check for missing data and out of range values. Categorical variables were reported as proportions, continuous variables were presented as mean and standard deviation. The prevalence of depression, anxiety, and stress were estimated as a proportion. Depression, Anxiety, and Stress-related scores were categorised as 'normal' (0-9, 0-7, and 0-14), 'mild' (10-13, 8-9, and 15-18), 'moderate' (14-20, 10-14, and 19-25), 'severe' (21-27, 15-19, and 26-33), and 'extremely severe' (28+, 20+, and 34+), respectively. Multivariable logistic regression was used to estimate odds ratios and 95% confidence intervals (CIs) adjusted for the potential confounders of participants 'age, education,

marital status, occupation, history of self-reported illness, duration of staying at home daily, activities during staying at home i.e., reading books, watching television, internet browsing, and gossiping with family members. The dependent variables i.e., depression, anxiety, and stress were categorised as 'yes' and 'no'. Due to inadequate power, sub-groups of depression, anxiety, and stress were excluded as dependent variables in independent multivariable regression analysis. A backward elimination method was used to decide the final multivariable model. The analysis included any significant variable at the 25% level in the univariate logistic regression model. The final model was based on the statistical significance of the covariates. The criterion we followed was to retain all the variables significant at the 5% level in the multivariate model. We excluded variables from the base model using backward elimination based on their p-value, starting with the variable with the highest p-value greater than 0.05.

Results

A total of 420 individuals participated in this study. The majority of the participants are young, completed graduation, never married, either studying or employed. Even during the initial days, 34.5% of the respondents 'areas were not strict lockdown. The majority of the respondents spent most of their time at home.

Table I presents the self-reported disease profile. The prevalence of depression, anxiety, and stress was relatively high among the study participants. Only a few participants reported high blood pressure, diabetes, cancer, and others.

Table I: Self-reported disease profile (N=420)

Name of the disease	Frequency (%)	95% CI (%)
Depression	197 (46.7)	42.1 – 51.8
Anxiety	164 (39.1)	34.3 – 43.9
Stress	146 (34.8)	30.2 – 39.5
High blood pressure	47 (11.2)	8.3 – 14.6
Diabetes	21 (5)	3.1 – 7.5
Asthma	34 (8.1)	5.6 – 11.1
Others	77 (18.3)	14.7 – 22.4

Table II presents the prevalence of depression, anxiety, and stress by the sex of the participants. A higher proportion of females reported more depression, anxiety, and stress than males.

Results from the multivariable logistic regression analysis of depression, anxiety, and stress are presented in Table III.

After multivariable adjustment, depression, anxiety, and stress were associated with females and the presence of physical illness. Additionally, depression and anxiety were inversely associated with gossiping among family members and watching television, respectively.

Table II: Distribution of Depression, Anxiety and Stress by sex of the participants (N=420)

Variable	Normal		Mild		Moderate		Severe		Extremely severe	
	M	F	M	F	M	F	M	F	M	F
Depression	168 (40.0)	55 (13.1)	37 (8.8)	21 (5.0)	55 (13.1)	21 (5.0)	14 (3.3)	15 (3.5)	17 (4.1)	17(4.1)
Anxiety	190 (45.3)	66 (15.7)	15 (3.5)	13 (3.1)	47 (11.2)	28 (6.7)	13 (3.1)	7 (1.7)	26 (6.2)	15 (3.5)
Stress	207 (49.3)	67 (15.9)	32 (7.6)	17 (4.1)	27 (6.4)	18 (4.3)	10 (2.4)	17 (4.1)	15 (3.5)	10 (2.4)

Table III: Predictors of Depression, Stress and Anxiety (N=420)

	Depression		
Variable	Odds Ratio	95% Confidence Interval	*P*
Sex, females	2.1	1.3 – 3.2	0.001
Absence of physical illness	0.4	0.3 – 0.6	<0.001
Gossiping with family members	0.5	0.3 – 0.7	<0.001
Anxiety			
Sex, females	1.9	1.2 - 2.9	0.005
Absence of physical illness	0.3	0.2 – 0.5	<0.001
Stress			
Sex, females	2.4	1.6 – 3.8	<0.001
Absence of physical illness	0.6	0.3 – 0.6	<0.001
Watching television	0.6	0.4 – 0.9	0.03

Discussion

In this study, we assessed the prevalence of depression, anxiety, and stress among a specific population group during the initial stage of COVID-19 pandemic in Bangladesh. The findings of this study reveal an increased prevalence of depression, anxiety, and stress among the study population. In this study, more than one-third of the participants reported depression (46.7%), anxiety (39.1%), and stress (34.8%). The prevalence of depression, anxiety, and stress in our study were much higher than the national estimate.[59]

Our study finding is consistent with several Chinese studies that reported a high prevalence of adverse mental health effects during COVID-19 pandemic in China.[16–20] More than one-third of Americans (36%) stated that Corona virus seriously affects their mental health. A study from Denmark reported psychological well-being during the COVID-19 pandemic and compared it with earlier Danish data acquired with a similar measure. It suggested that the psychological well-being of the overall Danish population was influenced adversely by the COVID-19 pandemic.[60]

Our study revealed that women are more likely to suffer from psychological consequences than men. Studies from Denmark also reported a similar observation.[60] In this study, we also observed that people with physical illness reported a higher risk of depression, anxiety, and stress. This findingis supported by the increased risk of COVID-19 and its severe outcomes among individuals with co-morbidities.[61]

In the past, psychological problems occurred during pandemics.[62] A Chinese study reported high levels of posttraumatic stress (PTS) symptoms since the SARS outbreak in 2003.[63]Fears of ailment, demise, and vulnerability of things to come during a pandemic are significant mental stressors for the population. Social detachment resulting from the loss of organised instructive and work activities also exacerbates public psychological well-being.[64]

Without definitive treatment and due to fear of death, Corona virus can affect our thoughts too. People may develop a feeling of helplessness. The evidence suggests that traumatic life events and stress increase the risk of developing anxiety disorders. Based on animal studies and responses to drug treatment, the three significant neurotransmitters related to anxiety are nor epinephrine (NE), serotonin, and ‘Ó-aminobutyric acid (GABA). [65]

Fear and worry about a new pandemic disease and what could happen maybe intense, and cause compelling feelings in adults and children.[14] Public health actions, such as social distancing, can cause individuals to feel isolated and lonely and increase stress and anxiety.[1] Reaction to stress during the COVID-19 pandemic mayrely upon an individual’s personal experience, social help support from family or companions, monetary circumstance, health and emotional background, the community they live in, and numerous other factors. [1, 14]

The strength of this study is the use of DASS-21 for determining depression, anxiety, and stress. The scale indicated high reliability and strong internal consistency.[66-67] To the best of our knowledge, this is one of the first study on mental health status during the initial days of COVID-19 pandemic in Bangladesh.

The main limitations of this study were the study design, relatively small sample size and study population. This online survey was conducted among Facebook users who were relatively young and highly educated. Therefore, the generalisability of this study finding might be limited. This was a cross-sectional study. Hence, the relationship between mental health status and risk factors might not be causal. Lastly, the result may just reflect psychological wellness status during the pandemic. Nevertheless, this study provides essential information about the initial psychological well-being of a population during the early stage of COVID-19 epidemic in Bangladesh.

The results of this study underscore the importance of providing mental health services to the general population. The survey underpins the proposition that COVID-19 pandemic can increase the risk of depression, anxiety, and stress. COVID-19 has portrayed a severe clinical picture and deadliness, social isolation, vulnerability, and financial uncertainty among general people. Mistrust of authorities who bungled the epidemic and flooded social media with error and speculation of intrigue have also negatively affected emotional well-being.[68]

Conclusion

For effective management of present and future pandemics, it is critical to get familiar with the mental health aspects of the COVID-19 epidemic from the point of view of public and worldwide psychological well-being. As the COVID-19 epidemic continues, this study finding may form a basis for developing a mental

health support strategy in Bangladesh. Furthermore, from the epidemiological perspective, larger-scale Cohort studies are needed to affirm the relationship between COVID-19 and adverse mental health effects.

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