

Emotional disorders in COVID-19 survivors

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Summary

COVID-19 pandemic has been associated with mental health challenges related to its treatment and outcome. COVID-19 affects both physical and mental health and have typically concerned depressive and anxiety symptoms. Poor Mental health status influence almost all spheres of life and contributes significant morbidity and mortality across the globe. This study aimed to assess the frequency and severity of emotional disorders among COVID-19 survivors attending in a tertiary care hospital in Bangladesh. Association of socio-demographic and illness-related variables with emotional & behavioral disorders among COVID-19 survivors also been clarified. It was a cross-sectional study conducted in Khulna medical college hospital from 1 September 2021 to 31 August 2022. Ethical clearance was taken from Institutional Ethical Review Board of Khulna medical college. Adult COVID-19 survivors attended in Psychiatry outpatient department were included in the study. Semi-structured questionnaire for socio-demographic and illness related variables, DASS-21, DSM-5-TR were the research instruments. Diagnosis and severity of emotional and behavioral disorders and comparison with past psychiatric history including emotional disorders (Before COVID-19 infection) were estimated by psychiatrists. Data were analyzed with SPSS version-26. Total 78 patients completed data; participation rate was 93.9.7%. Among them 55.1% were affected by Depression, 42.3% by Anxiety and 30.7% by Stress-related problems. After COVID-19 infection the proportion of emotional and behavioral disorders significantly increased. Correlation is significant at the 0.05 level ($P < 0.05$). Significant relationship was found between prolonged COVID-19 symptoms to predispose depression and inversely related to COVID-19 Vaccination. Positive past psychiatric history, service holder and low income and educated persons were more vulnerable to develop emotional disorders. The study revealed significant relationship between COVID-19 and depression, anxiety and stress and some other mental disorders. So, steps are required to aware people to build resilience and encourage for psychiatric screening.

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Introduction

The outbreak of COVID-19 has influenced all aspects of life. In the time of COVID-19 pandemic, many suicides have been reported due to depression. Therefore, early assessment and timely treatment can help to prevent these incidences. However, there has been minimal focus on mental health over physical health problems during this pandemic in Bangladesh. The pandemic has been associated with mental health challenges related to the fear of being affected by the virus, fear of isolation and available treatment & outcome. COVID-19 affects both physical and mental health & influences almost all spheres of life in all groups of people.¹ Alarming levels of psychological distress were reported among people during the COVID-19 pandemic.² COVID-19 has been associated with mental health challenges

related to the fear of being affected by the virus, relative insufficiency of the healthcare system and the mitigating measures.³ Increasing mental symptom prevalences during the COVID-19 pandemic have typically concerned depressive and anxiety symptoms. Like other extraordinary stress, COVID-19 also have different adverse effects on mental health. WHO Mental Health Atlas and other health service-providing organizations found that pandemic-related mental health services are not fully met anywhere in the world. The scenario in developing countries including Bangladesh were more deteriorating. Furthermore, very little is known about the direct relationship between COVID-19 pandemic-infected survivors and emotional & behavioral disorders. And the mechanism by which COVID-19 pandemic predisposes the disorders. Although

few COVID-19-related studies in mental health have been done previously but most of them were online-based. There is scarcity of related studies in this field. The information will help to define the needs and priorities of this patient group. It will also help to integrate to deal with such patients more effectively & administrative decisions may be taken for future management strategy. The study findings will increase awareness among professionals and the general population. Moreover, this wealth of data will be the source for future research. Considering this fact, the present study was designed with the aims to assess- The frequency & severity of emotional disorders among COVID-19-infected individuals who faced its consequences attending in a tertiary care hospital in Bangladesh. Whether COVID-19 infection predispose to emotional & behavioral disorder. The association of socio-demographic & illness-related variables with emotional & behavioral disorders among COVID-19 survivors.

Materials and methods

This was a cross-sectional study conducted in Khulna medical college hospital, Khulna. Adult COVID-19 survivors attended in Psychiatry outpatient department (OPD), Khulna Medical College Hospital (KMCH), Khulna, Bangladesh were included as study population. Individuals who fulfilled the inclusion and exclusion criteria were taken, among them 78 completed data out of 83 respondents. Convenient purposive sampling was collected one year from 1 September 2021 to 31 August 2022. Patients with history of pre-existing psychotic disorders, poorly communicable and intellectually disabled patients were excluded. Ethical clearance was taken from Institutional Ethical Review Board (IERB) of Khulna medical college, Khulna. Informed written consent (Bangla version) was taken from each attendants/ psychiatric patient. All sorts of confidentiality were ensured. The interviews were held in a peaceful and non-threatening environment. Semi-structured questionnaire for socio-demographic and illness related variables, short form of DASS-21-scale (Depression, Anxiety, Stress-Bangla validated version), DSM-5-TR (Diagnostic and statistical manual-5) were the research instruments.⁴ Diagnosis and severity of emotional & behavioral disorders and comparison with past psychiatric history (including emotional disorders before COVID-19 infection) of the responders were estimated by psychiatrists. After collecting data, editing was done manually and data (78) were analyzed with the help of computer software program IBM SPSS version-26 (Statistical package for social science).

Results

Participation rate was 93.9.7%. Firstly, the participants were purposively assessed by mental health expert (Psychiatrist).

The diagnosis and frequency of Mental disorders were done according to DSM-5-TR (Diagnostic and statistical manual-5). To understand the severity of emotional disorders all participants were assessed by self-reporting short form of DASS-21-Scale (Depression, Anxiety, Stress-Bangla validated version). Scoring was done by DASS-21 scoring template. Present study observed in the respondents of survived COVID-19 infected person 55.1% were affected by depression, 42.3% of respondents were affected by anxiety and 30.7% of respondents were affected by stress-related problems.

Table 1: Frequency and severity of depression (n=78)

Depression	Frequency	Percentage
Normal	35	42.2
Mild	22	26.5
Moderate	14	16.9
Severe	6	7.2
Extremely severe	1	1.2

Among the Depressed persons, 28% have mild, 18% have moderate, 7.7% have severe and 1.3% have extremely severe levels of depression respectively (Table 1). Respondents suffering from Anxiety revealed 16.6% have mild, 19.2% have moderate and 6.4% have severe levels of Anxiety (Table 2).

Table 2: Frequency and severity of anxiety (n=78)

Anxiety	Frequency	Percentage
Normal	45	54.2
Mild	13	15.7
Moderate	15	18.1
Severe	5	6.0

Table 3: Frequency and severity of stress (n=78)

Stress	Frequency	Percentage
Normal	54	65.1
Mild	9	10.8
Moderate	8	9.6
Severe	7	8.4

Patients who felt Stress revealed that 11.5% experienced mild, 10.2% moderate & 8.9% severe stress levels (Table 3). Frequency and severity of emotional disorders were also shown in figure 1.

Diagnosis and severity of some psychiatric disorders including behavioral addiction were assessed and compared clinically by Psychiatrist with past psychiatric history (including emotional disorders before COVID-19 infection).

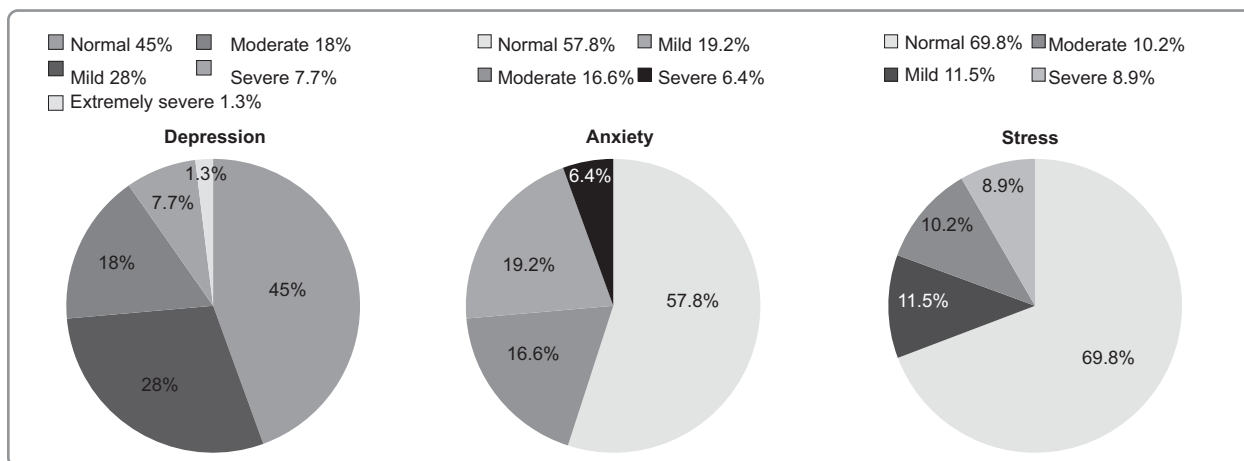


Figure 1: Pie chart showing frequency and severity of emotional disorders.

Table 4: Psychiatric diagnosis (before and after COVID-19 infection)

Psychiatric diagnosis	Before-COVID-19 infection	After-COVID-19 infection
No diagnosis	57.8%	20.5%
PTSD	2.4%	3.6%
GAD	8.4%	16.9%
MDD	6%	14.5%
OCD	1.2%	2.4%
PD	3.6%	4.8%
Behavioral addiction	2.4%	15.7%

After COVID-19 the proportion of emotional and behavioral disorders significantly increased.

The COVID-19 pandemic has a significant relationship with emotional disorders. After the COVID-19 infection the proportion of emotional and behavioral disorders significantly increased. Like – GAD 8.4% to 16.9%, Behavioral addiction 2.4% to 15.7%, MDD 6% to 14.5%, OCD 1.2% to 2.4%, PTSD 2.4% to 3.6% and Personality disorder is 3.6 % to 4.8%, respectively. (Table 4 & Figure-2)

Age & sex distribution revealed, most of the respondents were within 18-29 yrs followed by 30-39 yrs ,40% &25% respectively (Table 5).

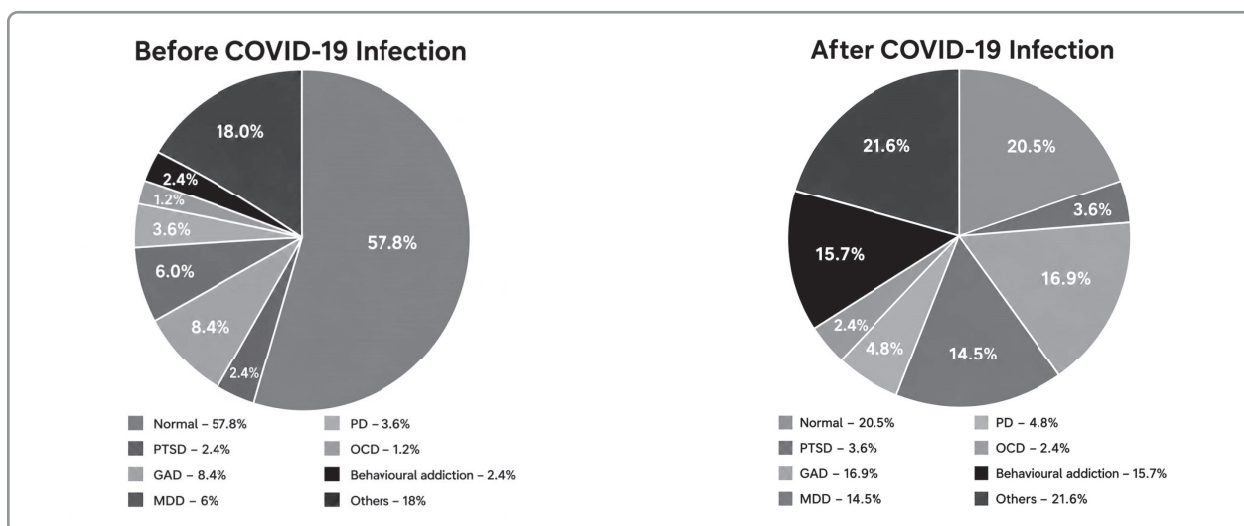


Figure 2: Pie chart showing psychiatric diagnosis (before and after COVID-19 infection)

Table 5: Age distribution of the respondents (n=83)

Age (in years)	Frequency	Percentage
18-29	33	39.8
30-39	21	25.3
40-49	13	15.7
50-59	10	12.0
60 and above	6	7.2
Total	83	100.0

Table 6: Sex distribution of the respondents (n=83)

Age (in years)	Frequency	Percentage
Male	43	51.8
Female	40	48.2
Total	83	100.0

Table 7: Distribution of religion, marital status, education and occupation of the respondents (n=83)

Age (in years)	Frequency	Percentage
Religion		
Islam	63	75.9
Hindu	20	24.1
Marital status		
Married	65	78.3
Unmarried	18	21.7
Education		
No education	7	8.4
Primary (Class 1–5)	2	2.4
Secondary (Class 6–8)	7	8.4
Secondary (Class 9–10)	4	4.8
Higher Secondary (Class 11–12)	11	13.3
Graduation and above	52	62.7
Occupation		
Service	50	60.2
Business	3	3.6
Farming	1	1.2
Driver	1	1.2
Household work	13	15.7
Unemployed	4	4.8
Other	11	13.3

According Table 6, Male and female respondents were 51.8% & 48.2% respectively. Most of respondents were Muslim (76%), married (78.3%), Graduate (62.7%), Service holder (60.2%) (Table 7).

Low-income people (63.8%) were more having good social support. Most patients experienced COVID-19 infection symptoms about 1-2 weeks (26.5%, and 37.3% respectively), having a positive family history of COVID-19 infection (68.7%). Treatment cost related to COVID-19 was <19000(61.5%). Mostly

had no past medical history (61.4%), and were partially vaccinated 53%. Correlation is significant at the 0.05 level, ($P < 0.05$). Prolonged duration of COVID-19 symptoms is related to predispose depression. And was inversely related to COVID-19 vaccination. Positive past psychiatric history, service holder & persons with low income and education were more vulnerable to develop emotional disorders.

Discussion

The Global Burden of Disease (GBD) data for 2020 (from 204 countries) indicates that the COVID-19 pandemic and associated lockdowns increased the prevalence of anxiety and depressive disorder worldwide.¹ This study revealed that respondents of survived COVID-19-infected persons, 55.1% were affected by depression, 42.3% respondents were affected by anxiety and 30.7% respondents were affected by stress-related problems. The findings were in good agreement with the findings of the other research works. An online survey results suggested that two-fifths of the participants (500) had depression and anxiety symptoms, and one-third were highly worried and felt stressed.⁵ Another study done in CMH-Dhaka among healthcare workers exposed to COVID-19 cases revealed (390) 21.6%, 43.1% and 24.1% had depression, anxiety and stress symptoms, respectively.⁶ A study done in Nepal among health care workers showed that 38 % suffered from anxiety and/or depression (Gupta et al., 2020). Our study found, that among the depressed persons, 28% have mild, 18% have moderate, 7.7% have severe and 1.3% have extremely severe levels of depression respectively. Respondents suffering from anxiety revealed 16.6% have mild, 19.2% have moderate and 6.4% have severe levels of anxiety. Patient felt stress reaction revealed 11.5% experienced mild, 10.2% moderate & 8.9% severe stress levels. The frequency and severity were consistent with different past studies. A study in NIMH, Bangladesh found, that 33.3% had COVID-related anxiety. The proportion of anxiety disorders and depressive disorders was higher among the respondents who had COVID-19-related anxiety (18.8% and 12.5%).³ Another recent study conducted from March 29 to April 06, 2020 reported high estimates of panic (79.6%) and generalized anxiety (37.3%) among Bangladeshi people in the community (Islam, Ferdous et al., 2020).⁷ A cross-sectional web-based survey revealed respondents were experiencing heightened depression and anxiety. Around 15% of them had moderately severe depression, whereas 18.1% were severely suffering from anxiety. The binary logistic regression suggests that older students have greater depression.⁸ A cross-sectional survey, carried out using Google forms shows 90(68.7 %) have mild anxiety, 80(61 %) mild depression, 28(21.3 %) moderate anxiety, 34(25.9 %) moderate depression, 13(9%) moderately severe anxiety and depression and 4(3%) severe depression. This study found after COVID-19 infection the proportion of emotional and behavioral disorders significantly increased. Like-GAD 8.4% to 16.9%, Behavioral addiction 2.4% to 15.7%, MDD 6% to 14.5%, OCD 1.2% to 2.4%,

PTSD 2.4% to 3.6% and Personality disorder 3.6 % to 4.8%, respectively. In Bangladesh, there has been no such type of study. However, one study done relating PTSD and COVID-19 in 2021 & another one in 2020 reported high estimates of Panic (79.6%), GAD (37.3%), where COVID-19 predisposed to develop PTSD with venerable patients. Our study revealed Male: female = 51.8%:48.2%, mostly within 18-29 yrs (39.8%) that was consistent with a cross-sectional survey using Google forms comprised 131 respondents among which 68(51.9 %) are females and 63(48 %) are males. The majority of respondents are in the age group of 20-30 years.⁹ Mostly had no past medical history (61.4%), and were partially vaccinated (53%). Treatment cost related to COVID-19 was <19000(61.5%). Low incoming people (63.8%) were more having good social support. Most of the patients are Muslim (76%), married (78.3%), graduate (62.7%) and service holder (60.2%). The majority of respondents have mild to moderate anxiety, depression and stress symptoms. This report is consistent with other studies.⁹

Prolonged duration of COVID-19 symptoms is related to predispose depression. And was inversely related to COVID-19 vaccination. Positive past psychiatric history, young adult, service holder & persons with low income and education were more vulnerable to develop emotional disorders. Due to COVID-19 crisis, suicide, domestic violence, mental disorders, anxiety, depressive disorders are already increasing worldwide (Sifat, 2020).¹⁰ But mental well-being and needs are neglected.¹¹ Although some general behaviours may help promote mental health and resilience during pandemic like-employing preventative measures to cope, staying with friends and family members, engaging in regular physical exercise, get enough sleep, avoiding alcohol and drug, using digital technology in a balanced manner and getting professional help for mental health.

In this study, a smaller number of participants were included from a single center. It was an observational study and there was no controlled group. The study was primarily based on history and treatment records, which may be unreliable with a chance of an information gap. Furthermore, the relationship between Pandemic (like -COVID-19) and other psychiatric disorder (other than Emotional Disorders) including behavioral & addictive disorders should be more clarified by large group, broad-based, multicentered study. Although the current study included a large bulk of information & wealth of data obtained that will be the source for future research and will help new studies. There is no conflict of interest except professional advancement and efficiency.

Conclusion

Different online studies were done in Bangladesh but little is known about the relationship between the COVID-19 pandemic and emotional disorders. The study revealed a significant relationship between the Pandemic and Depression, Anxiety & Stress and also some other mental disorders. So, steps are

required to aware people to build resilience to combat different types of ongoing & extraordinary stress like Epidemics or Pandemics. Individuals should be encouraged to undergo psychiatric screening that will help in preventing suicides and other mental issues.

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