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ORIGINAL ARTICLE

An online observational study assessing clinical characteristics and impacts of the COVID-19 pandemic on mental health: a perspective study from Bangladesh

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Abstract

Purpose The pandemic of coronavirus disease 2019 (COVID-19) has cost numerous lives and induced tremendous mental stress among people. The purpose of this research was to determine anxiety and depression levels, clinical features, and the connections between demographic variables and depression prevalence as well as anxiety prevalence among reported COVID-19 cases in Bangladesh.

Methods For the purpose of data collection, an online cross-sectional survey was carried out from May 26 to June 27, 2020, utilizing a Google adapted preformed questionnaire. The form was shared with a short overview and justification through Facebook, Twitter, Facebook messenger, Viber, and What's App. The Google form contains five parts: a brief introduction, an approval statement, demographics, clinical and radiological data, and mental health assessment by the Generalized Anxiety Disorder 7-item (GAD-7) scale and Patient Health Questionnaire (PHQ-9). Formal ethical clearance was taken from the Institute of Biological Science (IBSc), Bangladesh. Informed consent was ensured before participation.

Results One hundred and fifty-three (153) patients with COVID-19 who had an average age of 39.43 ± 17.59 years with male predominance (72%) were included. A total of 32.7% were doing health-care related jobs, and 17.7% lost their jobs due to COVID-19. Patients had a median income of 30,000 Bangladesh taka (BDT). Of all, 12.4% of the participants showed asymptomatic features, whereas 87.6% of patients were symptomatic and presented with fever (79%), cough (58.8%), myalgia (24.2%), breathlessness (23.5%), sore throat (21.6%), fatigue (19.6%), headache (13.7%), nausea and/or vomiting (11.8%), runny nose (9.8%), chest pain (9.2%), diarrhea (8.5%), stuffy nose (3.2%), ARDS (2.6%), oral ulcer (2.6%), and conjunctivitis (1.9%). Overall, the prevalence of anxiety and depression was 63.5% and 56.6%, respectively. Among the participants, 13.2% had only anxiety, 6.3% had only depression, and 50.3% had both.

Conclusion In most cases, middle age, male, and healthy workers were patients. Fever and cough were the standard presentations. Approximately two-thirds or 66.67% of patients had anxiety and depression, one or both.

Keywords COVID-19 · Bangladesh · Clinical characteristics · Anxiety · Depression

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Background

A number of pneumonia cases of suspected viral origin were found in Wuhan city, Hubei, China by December 2019 (Huang et al. 2020). This disease was identified first as novel coronavirus (2019-nCoV disease) which was later renamed as the coronavirus disease 2019 (COVID-19) under a global agreement and the virus was identified as SARS-CoV-2 (Siordia 2020). Bangladesh declared the first COVID-19 affected case three days earlier than the WHO's global announcement of the COVID-19 Pandemic on 11 March 2020

(Mina et al. 2020). More than 19,849,259 cases and 730,420 deaths had been documented worldwide by August 09, 2020, and 3399 deaths were reported in Bangladesh out of 257,600 confirmed cases (WHO 2020a, b). COVID-19 pandemic trajectory, the predicted number of cases and deaths or to what extent quarantine measures will clash with daily life remain uncertain for the experts. The clinical appearance of COVID-19 induced infection ranges from asymptomatic disease to extreme respiratory trouble and shock (Huang et al. 2020; Banna et al. 2020; Chen et al. 2020; Chan et al. 2020). Symptomatic cases are associated initially with fever, respiratory symptoms, e.g., Breathe shortness and cough, and are linked to different proportions of dyspnea, headache, myalgia, rhinorrhea, sore throat, nausea, and/or vomiting (Chen et al. 2020; Chan et al. 2020; Zhu et al. 2020a, b; Rodriguez-Morales et al. 2020). Furthermore, patients also show neurological symptoms, such as ataxia, convulsion (Baig 2020), and some other neurological issues, such as ischaemic or haemorrhagic stroke, dizziness, impaired mental condition, Guillain-Barré syndrome, or acute necrotising encephalopathy (Mao et al. 2020; Poyiadji et al. 2020; Li et al. 2020). Within 2–40% of the patients, gastrointestinal symptoms are reported in case series (Guan et al. 2020; Zhang et al. 2020) and diarrhea may be the primary presentation of infection (Song et al. 2020). In a number of centers, tasting or olfactory disorders were also reported (Giacomelli et al. 2020). During the outbreaks, cardiovascular symptoms, for example, arrythmia, decreased cardiac activity, myocardial inflammation or injury have also been recorded (Inciardi et al. 2020). A new retrospective observational analysis in China showed that COVID-19 positive patients had a hypercoagulable condition (Zhou et al. 2020; Vetter et al. 2020). A large number of Bangladeshi citizens are especially vulnerable to SARS-CoV-2 because of their high population density, improper personal hygienic habits, and poor financial conditions. Fear of sickness, the lockdown isolation, the economic need to work, and the failure to ensure public access for necessary things such as food can contribute to increased psychological issues for the general population. In addition to physical manifestations, a fair number of patients experience psychiatric disorders and/or complications, particularly elderly people and persons with low incomes are at greater risk for impaired mental health (Zhu et al. 2020a, b; Wang et al. 2020; Kong et al. 2020). The available published psychological effect research for COVID-19 centered particularly on healthcare professionals and the general population but not on confirmed COVID-19 patients (Zhu et al. 2020a, b; Wang et al. 2020). The latest studies from China show that 31.9% and 33.7% of COVID-19-positive patients have anxiety and depression symptoms (Salari et al. 2020). Symptoms severity are also related to different sociodemographic variables, including gender, age, and social assistance (Kong et al. 2020). There is a clear difference in sociodemographic features between countries (Huang et al. 2020; Siordia 2020; Banna et al. 2020; Baig 2020; Mao et al. 2020), and the management approach of one country may not be applicable in another. Therefore, it is important to know the specific features of each country for the strategic planning and proper execution. Although several published reports included different perspectives of COVID-19 patients from various countries, none from Bangladesh has yet been reported.

In this current study, we aimed to assess COVID-19 clinical manifestations, anxiety, and depression percentages and the association between demographic factors, depression, and anxiety in reported COVID-19 cases from Bangladesh. This scientific study may help scientists and policy makers to gather an overview of the country's scenarios and may help to raise consciousness about this pandemic.

Materials and methods

The Institute of Epidemiology, Diseases Control and Research (IEDCR) announced the first COVID 19-positive case in Bangladesh on 8 March 2020. The number of COVID-19 cases rose at an unprecedented pace at the end of March. Consequently, since 26 March, the Government of the People's Republic of Bangladesh has declared general holidays/lockdown, which at that time was modeled on the basis of the situation (TSB 2020). Regardless of the lockdown, data collection from health clinics or regional screening samples from neighborhood facilities is not achievable. A cross-sectional electronic survey method was therefore adopted from May 26 to June 27, 2020. COVID-19 positive people, aged >18 years old who were using Facebook (the most commonly accessed social media in the country) were primarily chosen as the target category. Moreover, people using Twitter, Viber, WhatsApp, and other online communication portals were also approached. The author's "Facebook" news feed shared a recruiting message. It was then posted by the entire author team on "Twitter" and other parties via their contacts in "Facebook Messenger," "WhatsApp," and "Viber." This post included a quick overview of the context, purpose, processes, volunteer essence of involvement, confidentiality and secrecy claims, questionnaire completion notes, and the link to the online questionnaire (Google Form). The contents of the letter were understood and accepted by the participants in the study, who are citizens of Bangladeshi nationality, instructed to complete a survey by clicking on the link. Moreover, via short message services (SMS), the questionnaire link or the link leading to the Google Form was circulated to as many of the respondents as possible. The Google form consists of five parts: (i) a brief introduction, (ii) consent statement, (iii) sociodemographic characteristics of the participants, which include: age, sex, residence, education, occupation, monthly income, number of family members, suspected place of

contact, and travel history of the participants, (iv) clinical features, which include: asymptomatic and symptomatic features, various types of symptoms, such as fever, cough, breathlessness, myalgia, sore throat, fatigue, nausea and/or vomiting, headache, runny nose, chest pain, diarrhea, ARDS, stuffy nose, conjunctivitis, and oral ulcer; also radiological information, such as, chest X-ray, CT scan of the chest, and other existing co-morbidities of the participants, (v) mental health assessment by the Generalized Anxiety Disorder 7-item (GAD-7) scale (Johnson et al. 2019) and Patient Health Questionnaire (PHQ-9) (Levis et al. 2019). The GAD-7 is a valid and efficient tool for screening for GAD and assessing its severity in clinical practice and research. The GAD-7 scale is a valid and reliable tool for screening of anxiety and assessing its severity in epidemiological surveys. The 7 items scale of the Bangla Generalized Anxiety Disorder assessment questionnaire (Haque et al. 2014) was used to assess the level of anxiety. This scale consists of 7 items answered on a four-point Likert scale ranging from 0 ("not at all") to 3 ("nearly every day"). The level of anxiety was categorized into four groups as minimal, mild, moderate, and severe based on scoring 0–4, 5–9, 10–14, and 15–21, respectively. In this study, those scoring (≥ 10) moderate to extremely severe were placed to determine the existence of anxiety, similar to levels of depression on the PHQ-9.

For the evaluation of the frequency and extent of anxiety and depression among the participants, the GAD-7 and PHQ-9 questionnaires were used. In order to notify the post regarding any difficulties to completing the evaluation form, a direct email address and a contact number have been given in the post. Initially, ten random participants completed a questionnaire pretest, using the pilot experience to make additional changes before the final online release of Facebook's post. The form has been set in order not to comply with the following sections of the questionnaire when anyone clicks the link to join and does not agree with the informed consent declarations. Hence, a total of 437 responses were found, and only 153 respondents actually agreed and completed the form. These 153 responses were finally included in the study. Eight data points were filled by the relatives of the deceased persons.

Ethics statement Before the commencement of the study, formal ethical approval was obtained from the Ethical Review Committee (ERC) of the Institute of Biological Science (IBSc), Bangladesh. In accordance with the new Helsinki Declaration, all approaches were introduced. Prior to registration, all respondents gave written permission.

Data cleaning and analyses Because the Google process is automatic, data fill up is processed as "comma separate value" (csv) format in Google drive as sheets. The sheet was cleaned, assembled, and imported into the statistical software for social science (SPSS) 25 (SPSS Inc., Chicago, IL, USA) for final analysis. Descriptive statistics were used during analysis, where continuous variables were expressed as the mean ± standard deviation and categorical variables were expressed as count (percentage).

Results

A total of 153 persons infected with COVID-19 were included in this study. The mean age of the patients was 39.43 ± 17.59 years. The majority of patients were aged <30 years (28.1%). Among all, 72% of the patients were male, and 56.2% came from the urban areas and 19.6% were from rural areas. Nearly, 13.7% patients received no formal schooling and 30% of patients completed graduation and above. The majority of patients were doing private service (29.4%) and 9.8% of the participants were unemployed. Among the participants, 32.7% had healthcare-related jobs, and 17.7% lost their jobs due to the presence of COVID-19. The median monthly family income of patients was 30,000 BDT, with the majority having incomes less than 25,000 BDT (39.9%). Nearly half of the participants had a family of four or more people (49.1%). The most common suspected place of contact was the workplace (47.1%), 18.9% was from market places, 12.5% of the suspected place of contact was unknown, and 1.2% had a travel history (Table 1).

Table 2 lists the preventive measures taken by patients for COVID-19. Proper social distancing practice, putting up of masks, hand-washing, refrain from touching eyes, nose or mouth and covering nose and mouth with bent elbow or tissue while coughing or sneezing was practiced by 86.3, 83.7, 82.4, 83, and 81% of the respondents, respectively.

COVID-19 symptoms were present in 87.6% of the participants. The most common presenting symptom was fever (79%), followed in decreasing order by cough (58.8%), myalgia (24.2%), breathlessness (23.5%), sore throat (21.6%), fatigue (19.6%), headache (13.7%), nausea and/or vomiting (11.8%), runny nose (9.8%), chest pain (9.2%), diarrhea (8.5%), stuffy nose (3.2%), ARDS (2.6%), oral ulcer (2.6%), and conjunctivitis (1.9%). Chest X-ray was performed in 25.4% of patients, among who 46.2, 35.9, and 17.9% had normal chest X-ray, bilateral pneumonia, and unilateral pneumonia, respectively. A CT scan of the chest was performed in five patients, and all had bilateral pneumonia. Among all, 41.8% had co-morbidities, among who 22.9, 14.4, 11.1, and 0.6% had endocrine, respiratory, cardiovascular, and hematological disease (Table 3).

Patients were most commonly treated with an antibiotic (64%), followed in second by hydroxychloroquine (27.5%). Antiviral and corticosteroids were given to 5.9 and 2.6% patients, respectively. Oxygenation was needed in 7.8% of patients. Overall, 18.9% of patients had an outcome at the time of data collection. Among those, 72.4% were discharged

Table 1 Sociodemographic characteristics of individuals with COVID-19 ($n = 153$)

Variables	Findings
Age (years)	39.43 ± 17.59
Age groups	
< 30	43 (28.1)
31–40	37 (24.2)
41–50	27 (17.7)
51–60	23 (15.0)
> 60	23 (15.0)
Sex	
Male	110 (72)
Female	43 (28)
Residence	
Urban	86 (56.2)
Semi urban	87 (24.2)
Rural	30 (19.6)
Education	
No formal schooling	21 (13.7)
Primary	31 (20.4)
SSC or similar	38 (24.8)
HSC or similar	17(11.1)
Graduation	34 (22.2)
Post-graduation	12(7.8)
Occupation	
Private service	45 (29.4)
Government service	35 (22.9)
Businessman	31 (20.3)
Housewife	21 (13.7)
Student	6(3.9)
Unemployed	15(9.8)
Health-care related job	50 (32.7)
Became unemployed due to COVID-19	17 (17.7)
Monthly income (BDT)	30,000 (16000–50,000)
< 25,000	55 (39.9)
25,000 to 50,000	53 (38.4)
50,001 to 75,000	15 (10.9)
> 75,000	15(10.9)
Number of family members living in the same house	
One	12(7.8)
Two to four	66 (43.1)
≥ Four	75 (49.1)
Suspected place of contact	
Workplace	72 (47.1)
Market place/bazar	29 (18.9)
Home	15(9.8)
Hospital	12(7.8)
Mosque	6(3.9)
Unknown	19 (12.5)
Travel history (outside country)	25 (1.2)

Continuous data is expressed as mean ± SD or median (IQR) and frequency data is expressed as counts (percentage)

Table 2 Preventive measures practices of individuals with COVID-19 ($n = 153$)

Variables	Findings
Social distancing practice	
Always	132 (86.3)
Not always	17 (11.1)
No	4 (2.6)
Putting up mask	
Always	128 (83.7)
Not always	17 (11.1)
No	8 (5.2)
Washing hands	
Frequent	126 (82.4)
Not frequent	21 (13.7)
No	6 (3.9)
Refrain from touching eyes, nose or mouth	
Frequent	127 (83)
Not frequent	19 (12.4)
No	7 (4.6)
Covering nose and mouth with bent elbow or tissue while coughing or sneezing	
Frequent	124 (81)
Not frequent	21 (13.7)
No	8 (5.3)

Data is expressed as counts (percentage)

without complications, and 27.6% died. Among those who were being treated, 45.2% were isolated at home, 39.5% were being treated in dedicated COVID-19 hospitals, and 15.3% were being managed at general hospitals (Table 4).

Anxiety and depression were assessed among 145 living patients. The prevalence of anxiety and depression was 63.5 and 56.6%, respectively. Among all, 50.3% had both anxiety and depression, 13.2% had only anxiety, and 6.3% had only depression. Among patients with anxiety, 58.7%, 18.5%, and 22.8% had mild, moderate, and severe anxiety, respectively. Among patients with depression, 48.8, 37.8, 4.9, and 8.5% had mild, moderate, moderately severe, and severe depression, respectively (Table 5).

Discussion

We extracted data from a total of 153 Bangladeshi patients with COVID-19 confirmed through RT-PCR from May 26 to June 27, 2020. The average age of all patients was 39.43 ± 17.59 years, with a majority belonging to <30 and 31–40 years (52.3%). The Institute of Epidemiology, Disease Control, and Research (IEDCR) data revealed that 66.5% of the Bangladeshi COVID-19 cases were aged between 21 and 50 years (IEDCR 2020). This COVID-19 age distribution in Bangladesh is comparable to that in India, but varies from that in the United States, China and Spain, among the countries that are severely affected with SARS-CoV-2 virus (Maswood 2020). This may be because the younger group in Bangladesh ignored government orders and prohibition, wrongly deemed exempt from COVID-19, and the lower middle age (27.1 years) as opposed to other countries, could be another factor (Index Mundi 2020). We observed a male predominance (72%) consistent with the COVID-19 status of Bangladesh (male 69%) (IEDCR 2020), indicating a strong gender discrepancy in COVID-19 case identification of the adult population in Bangladesh. It can be exacerbated by Bangladesh's social history, where a man is in most situations the only wage earner in his family and wants more autonomy compared with a woman. An analytical report by Hossain et al. regarding COVID-19 cases in Bangladesh indicated that the underreporting of female patients due to timidness and/or social stigma even after infections is an issue that leads to rapid progression of the disease (Hossain et al. 2020). However, studies from other countries also found a greater number of male patients with COVID-19 infection than female (Chen et al. 2020; Garg et al. 2020; Badawi and Ryoo 2016; Channappanavar et al. 2017) MERS-CoV and SARS-CoV had a similar pattern of sex distribution (Badawi and Ryoo 2016; Channappanavar et al. 2017) as different factors have been shown to account for the sex-based disparity in immune responses, including genetic factors and hormonal mediators (Jaillon et al. 2019).

Table 3 Clinical features of patients with COVID-19 ($n = 153$)

Variables	Findings
Presentation	
Asymptomatic	19 (12.4)
Symptomatic	134 (87.6)
Symptoms	
Fever	121 (79)
Cough	90 (58.8)
Myalgia	37 (24.2)
Breathlessness	36 (23.5)
Sore throat	33 (21.6)
Fatigue	30 (19.6)
Headache	21(13.7)
Nausea and/or vomiting	18(11.8)
Runny nose	15 (9.8)
Chest pain	14(9.2)
Diarrhea	13(8.5)
Stuffy nose	5(3.2)
ARDS	4(2.6)
Oral ulcer	4(2.6)
Conjunctivitis	3(1.9)
Investigation	
Chest X-ray	
Done in	39 (25.4)
Normal	18(46.2)
Bilateral pneumonia	14(35.9)
Unilateral pneumonia	7(17.9)
CT scan of chest	
Done in	5 (3.3)
Bilateral pneumonia	5(100)
Co-morbidities	
Present	64 (41.8)
Endocrine disease	35 (22.9)
Respiratory disease	22 (14.4)
Cardiovascular disease	17 (11.1)
Hematological disease	1 (0.6)

Data is expressed as counts (percentage)

Among the participants, 32.7% had healthcare-related jobs, with the most common suspected place of contact being the workplace (47.1%). Hossain et al. found 25.66% health workers among all COVID-19 cases of Bangladesh, ranking hospital physicians on top followed by nurses (Hossain et al. 2020). This exposure positions healthcare staff at the main infection vector, requiring that appropriate precautions be taken to minimize the chance of infection (Hasan 2020). Therefore, a fast detection of asymptomatic infections should be checked between health workers before and after SARS-COV-2 exposure (Huang et al. 2020).

In this study, 87.6% of participants were symptomatic, wherein the most commonly reported symptoms were fever, cough, breathlessness, myalgia, sore throat, and fatigue. Less commonly reported symptoms included headache, nausea and/or vomiting, chest pain, runny nose, diarrhea, stuffy nose, ARDS, oral ulcer, and conjunctivitis. Several studies also

Table 4 Management and clinical status of persons with COVID-19 ($n = 153$)

Variables	Findings
Treatment history	
Antibiotic	98 (64)
Hydroxychloroquine	42 (27.5)
Oxygen	12 (7.8)
Antiviral	9 (5.9)
Corticosteroid	4 (2.6)
Clinical status	
Outcome present	29 (18.9)
Currently under treatment	124 (81.1)
Treatment place	
Home isolation	56 (45.2)
Being treated in COVID-19 hospital	49 (39.5)
Being treated in general hospital	19 (15.3)
Outcome	
Discharged without complication	21 (72.4)
Died	8 (27.6)

Data is expressed as counts (percentage)

Table 5 Anxiety and depression among persons with COVID-19 ($n = 145$)

Variables	Findings
Anxiety disorder	
Prevalence	92 (63.5)
Severity	
Mild anxiety (GAD7: 5–9)	54 (58.7)
Moderate anxiety (GAD7: 10–14)	17 (18.5)
Severe (GAD7: 15–21)	21 (22.8)
Depressive disorder	
Prevalence	82 (56.6)
Severity	
Mild (PHQ9: 5–9)	40(48.8)
Moderate (PHQ9: 10–14)	31 (37.8)
Moderately severe (15–19)	4 (4.9)
Severe (20–27)	7 (8.5)
Distributions	
Both anxiety and depression	73 (50.3)
Only anxiety	19 (13.2)
Only depression	9 (6.3)
None	44 (30.3)

Data is expressed as counts (percentage)

found similar clinical presentations, mostly fever, dry cough, and dyspnea (Vetter et al. 2020; Garg et al. 2020; Singhal 2020), correlating clinical features between COVID-19 and previous beta coronavirus infections (Huang et al. 2020). Nonetheless, the entire spectrum of clinical effects is not known yet, as the signs recorded indicate a vast variety of moderate to severe and in many cases asymptomatic signs (Mizumoto et al. 2020; Ng et al. 2020; Lippi et al. 2020; Nishiura et al. 2020; Zou et al. 2020). We found that 12.4% of our study patients were asymptomatic, which is comparatively lower than that found in earlier cited studies (Mizumoto et al. 2020; Oran and Topol 2020; Long et al. 2020;Nishiura et al. 2020). In Bangladesh, it is permissible to check COVID-19 for only symptomatic patients and people with experience of interaction with reported cases, owing in particular to the lack of RT-PCR kits and laboratory facilities (Mina et al. 2020). For treating SARS-CoV-2 contaminated cases, no drug regime has been authorized yet (Singhal 2020; Kolifarhood et al. 2020), although our national guideline for clinical management of COVID-19 promoted supportive and symptomatic treatment protocols along with judicial use of different modalities of drug regimen found to be effective by different trials (DGHS 2020). This sequence has been accompanied by more than half of patients getting hydroxychloroquine with antibiotics; also, antiviral and corticosteroids were given in a fewer number of cases. Oxygenation was required in 7.8% of cases.

We found a case-fatality rate of 5.23% out of 153 patients, though the rate is higher (28.6%) according to methods for estimating the case-fatality ratio for a novel, emerging infectious disease (Ghani et al. 2005). Nevertheless, the case fatality rate is frequently underestimated during the early stages of the pandemic because the identification is primarily geared toward the more severe cases (Worldometer reports 2020). Proper social distancing practice, putting up of mask, handwashing, refrain from touching eyes, nose or mouth, and covering nose and mouth with bent elbow or tissue while coughing or sneezing was practiced by 86.3, 83.7, 82.4, 83, and 81% of the respondents, respectively. This high visibility is largely attributed to the fact that government and media have been able to access knowledge about the virus since the epidemic began, as well as to its contraction. Another explanation could be that 65.9% of students received a degree of academic study backed by the positive correlation between educational attainment and COVID-19 awareness (Zhong et al. 2020; Erfani et al. 2020). Among the study participants, 63.5 and 56.6% had anxiety and depression, respectively. Among those with anxiety, 58.7, 18.5, and 22.8% had mild, moderate, and severe anxiety, respectively, and among those with depression, 48.8, 37.8, 4.9, and 8.5% had mild, moderate, moderately severe, and severe depression, respectively. A similar report (Liu et al. 2020) was noticed in China, where in cases with a total of 53.8%, respondents suffered from moderate to severe epidemic psychology; 16.5% reported mild to serious depression symptoms; 28.8% reported moderate to severe symptoms of anxiety; and 8.1% report moderate to severe level of stress. While the major public psychological consequences to date are increased rates of stress and depression, when new interventions and impacts for spread reduction, in particular quarantine, are implemented and influence the habits or living circumstances of many individuals, the levels of isolation, depression, unhealthy intake of alcohol, narcotics, and self-harm or suicide are still anticipated to develop (WHO 2020a, b).

Conclusion

This series mainly featured medium-aged individuals, males, and medical professionals. In more than 80% of the patients, preventative procedures were maintained. Fever and cough were the most common symptoms, with a significant proportion of patients with breathing problems, sore throat, and exhaustion. The treatment was frequently carried out with antibiotics and hydroxychloroquine. Among COVID-19 affected patients, depression and anxiety were prominent, as approximately two-thirds of patients had one or both.

Limitations

There are several limitations to this study. First, 153 patients have been included with confirmed cases regarding COVID-19 and medically presumed, but undiagnosed cases have been removed. Second, comprehensive information about patients was not available, particularly on the clinical outcomes, because most patients were hospitalized when we submitted the manuscript. Third, an oversampling of a certain network of peers (for example socially involved) occurred, and it can therefore be treated as a selection bias, which adds another limitation to this research. The conclusion is therefore less widespread to the whole population, especially to less educated individuals. One other limitation is that self-reported degrees of psychological effects, anxiety, depression, and stress are not always consistent with the evaluation by specialists in mental health.

Future scope and recommendation of the study

The findings of this analysis provide an early evaluation of the epidemiological and clinical features of Bangladesh's COVID-19 cases. Further research studies are required to gain an overview of clinical severity in outpatients, primary care, and community settings.

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Compliance with ethical standards

Conflict of interests The authors declare they have no conflict of interest.

Ethical consideration Ethical measures were taken throughout the study period to maintain a high standard of confidentiality and anonymity of the participants. Formal ethical clearance was taken from the ethical review committee of the Institute of Biological Science (IBSc) for conducting the study, and formal permission was taken from the responders through Google Form.

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