# *Original Research Article*

# Major Symptoms and Outcome of Covid-19 Positive Patients: A Study in a Tertiary Care Hospital in Bangladesh


***ABSTRACT***

***Background:*** *An outbreak of Covid-19 caused by the SARS-Cov-2 initially emerged in China in December 2019 and the first Covid-19 patient was detected on 8 March 2020 in Bangladesh. The preconception about the major symptoms and outcomes of Covid-19-positive patients may be helpful for healthcare professionals in the management of Covid-19 patients. This study aimed to evaluate the major symptoms and outcomes of covid-19 positive patients.* ***Methods:*** *This prospective observational study was conducted in the Department of Medicine, Rajshahi Medical College Hospital, Rajshahi, Bangladesh from January 2021 to December 2021. In total 67 confirmed Covid-19 cases by RT-PCR tests who attended the mentioned hospital were enrolled in this study as the study population. For data collection, a pre-designed questionnaire was used. Along with demographic and clinical features data regarding in-hospital mortality, intensive care unit (ICU) admission, use of invasive mechanical ventilation, total hospital length of stay, complications, and treatment patterns were recorded. Collected data were processed, analyzed and disseminated by using the MS Excel program.* ***Results:*** *The highest number of patients were with a cough which was found among 49% of cases. Besides this, shortness of breath, hypoxemia/oxygen use, lower limb swelling and bleeding were found among 39%, 27%, 12% and the rest 7% of patients respectively. The highest number of patients were with hypertension (HTN) as comorbidity which was found in 15% of cases. Besides this, diabetes mellitus (DM), chronic kidney diseases (CKD), chronic respiratory diseases (CRD), cancer/immunodeficiency and cardiac diseases were found among 12, 10%, 7%, 4% and the rest 1% of patients, respectively. As the outcomes, the cure rate was found up to 97% and death occurred in only 3% (n=2) cases. We observed that 10% of patients did not stay at the hospital even for a single day. For only 7% of patients, ventilation facilities were in needed and the average ventilation time was 13.5 days.* ***Conclusion:*** *Cough and shortness of breath are two major symptoms for Covid-19 patients. Proper ventilation and ICU facilities can decrease the suffering, mortality as well as morbidity of Covid-19 patients.*



***Keywords:*** *Covid-19 positive, SARS-Cov-2, Symptoms, Outcome, RT-PCR, Comorbidity.*




## 1. INTRODUCTION

Now a day, the name 'Covid-19' is treated as a threat. In Bangladesh, for the first time, Covid-19 cases were detected in Dhaka on the 8th March of 2020 [1]. "Covid-19 which is also called a novel coronavirus disease is by far the most concerning outbreak of atypical pneumonia since the far less detrimental 2003 outbreak of severe acute respiratory syndrome (SARS)" [1]. "Once upon a time, 'Covid 19 pandemic' has been declared an international public health emergency by the WHO" [2]. "By 1st July of the year of 2020, the Covid-19 pandemic has infected over 10 million people across the world, causing more than 5,00,000 deaths" [3]. "The unpredictable nature of this situation as well as the uncertainty regarding Covid-19 can often trigger psychological distress and mental illness, including depression, anxiety, and traumatic stress" [4]. "The WHO showed that 75% of 122 surveyed countries experienced disruption in noncommunicable disease (NCD) services during the pandemic of Covid-19" [5]. "The increased fear of Covid 19 or being diagnosed with Covid-19 disease has significantly affected people's medical-seeking behavior and anxiety. Such attitudes were noted particularly in slums and in communities of low socio-economic status in Bangladesh, Nigeria, Kenya and Pakistan" [6]. In several countries, excess mortality during the pandemic of Covid 19 has been premeditated by many authors. Wu et al. [7] found "35% excess deaths in the United Kingdom between 2nd March 2020 and 30th June 2020". In addition, excess mortality was seven-fold higher than baseline in New York City, USA at the peak of the pandemic [8] reported 20% excess mortality in all US cities. The objective of this study was to evaluate major symptoms and outcomes of covid-19 positive patients. in Bangladesh.

## 2. METHODOLOGY

This was a prospective observational cohort study. The study was conducted in the Department of Medicine, Rajshahi Medical College, Rajshahi, Bangladesh from January 2021 to December 2021. A total of 67 confirmed

Covid-19 cases by RT-PCR tests who attended the mentioned hospital was finalized as the study subjects. Due to a shortage of supplies and resources, from a total of 365 suspected Covid-19 patients, 67 confirmed Covid 19 cases were randomly selected as the study population. Before data collection, properly written consent was taken from all the patients. Following the principles of human research specified in the Helsinki Declaration [9] and executed in compliance with currently applicable regulations and the provisions of the General Data Protection Regulation (GDPR), the whole intervention was conducted [10]. According to the inclusion criteria of this prospective study, both male and female Covid 19 confirmed cases (By RT-PCR tests) of several ages and professions, who attended the mentioned hospital were included as the study population. On the other hand, according to the exclusion criteria of this study, severely ill patients, cases of surgery, very aged geriatric patients and ICU patients for a long time were excluded. Participants' opinions as well as diagnostic reports along with RT-PCR test reports were the basic source of information in this study. For data collection, a predesigned questionnaire was used. Data regarding the demographic and clinical status and outcome of the participants were recorded.

By using the MS Excel program, data were processed, analyzed and disseminated.

## 3. RESULT

In this study, among the total of 67 patients, 70% were male whereas the rest 30% were female. So, the male-female ratio of the participants was 2.33:1. The highest number of patients in this study was from the 51-60 years age group which was 27%. Then 3%, 21%, 16%, 12% and the rest 21% of patients were from 21-30, 31-40, 41-50, 61-70 and > 70 years age groups, respectively. According to the BMI status of the patients, we observed that the majority of the patients were with normal body weight (BMI:18.5-24.9 $Kg/m^2$) which was 54% and the rest 46% were with overweight status. In this study, in analyzing the clinical symptoms of the patients, we observed that the highest number of patients were with cough which was found among 49% of cases. Besides this, shortness of breath, hypoxemia/oxygen use, lower limb swelling and gastrointestinal bleeding were found among 39%, 27%, 12% and the rest 7% of patients respectively. In assessing the comorbidities among the patients, we noticed that the highest number of patients were with hypertension which was found in 15% of cases. Besides, diabetes mellitus, chronic kidney diseases, chronic respiratory diseases, 'cancer or immunodeficiency' and cardiac diseases were found among 12%, 10%, 7%, 4% and 1% of patients, respectively. In this study, among all the Covid-19 patients, as the outcomes, the cure rate accounted for up to 97% and death occurred in only 3% (n=2) cases. As per the report of hospital staying of the patients, we found that 10% of patients did not stay at the hospital even for a single day. For only 7% of Covid-19 patients, ventilation facilities were needed and the average ventilation time (n=5) was 13.5 days.

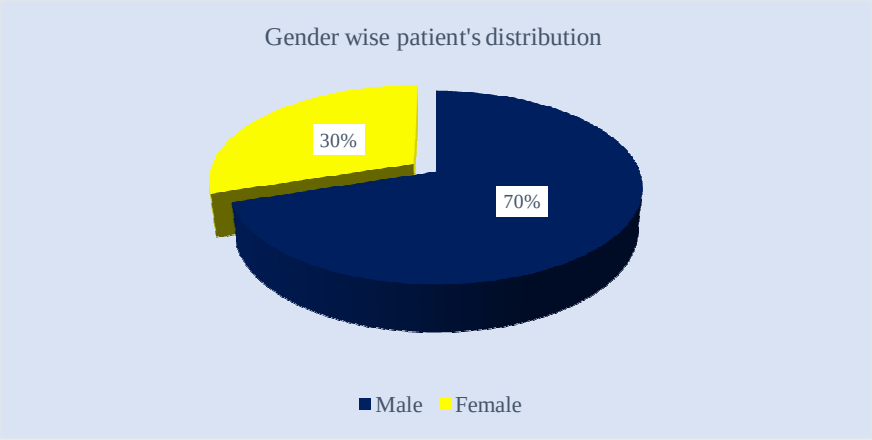


*Figure 1: Pie chart showed gender distribution of patients (N=67)*

**Table 1:** Distribution of the study patients by age (N=67)

| Age (Years) | n | % |
|---|---|---|

| | | |
|---|---|---|
| 21 - 30 yrs. | 2 | 3.0% |
| 31 - 40 yrs. | 14 | 21.0% |
| 41 - 50 yrs. | 11 | 16.0% |
| 51 - 60 yrs. | 18 | 27.0% |
| 61 - 70 yrs. | 8 | 12.0% |
| >70 yrs. | 14 | 21.0% |

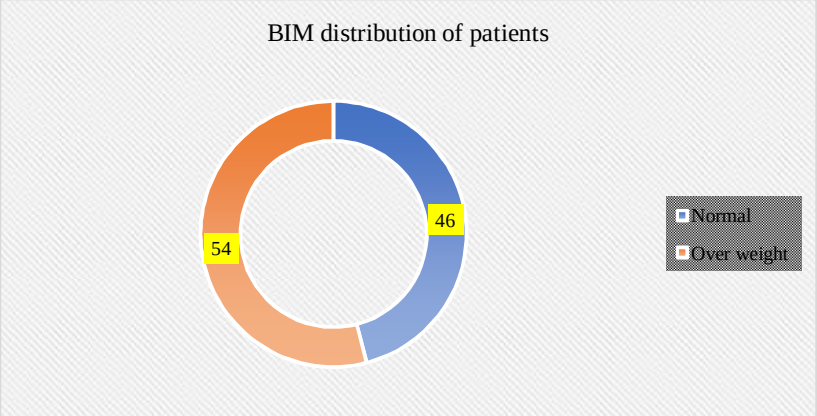


*Figure 2: Ring chart showed BMI distribution of patients (N=67)*

**Table 2:** Distribution of major symptoms among patients (N=67)

| Major symptoms | n | % |
|---|---|---|
| Cough | 33 | 49% |
| Shortness of breath | 26 | 39% |
| Hypoxemia/Oxygen use | 18 | 27% |
| Lower limb swelling | 8 | 12% |
| Bleeding | 5 | 7% |

**Table 3:** Distribution of comorbidities among patients (N=67)

| Characteristic | n | % |
|---|---|---|
| Hypertension | 10 | 15% |
| Diabetes Mellitus | 8 | 12% |
| Chronic kidney disease | 7 | 10% |
| Chronic respiratory diseases | 5 | 7% |
| Cancer/Immunodeficiency | 3 | 4% |
| Cardiac diseases | 1 | 1% |

**Table 4:** Distribution of outcomes among patients (N=67)

| Characteristics | n | % |
|---|---|---|
| Survival | | |
| Cured | 65 | 97% |
| Death | 2 | 3% |
| Hospital staying (Day) | | |
| Not stayed | 7 | 10% |

| | | |
|---|---|---|
| Stayed for <3 days | 17 | 25% |
| Stayed for 3-7 days | 22 | 33% |
| Stayed for 8-14 days | 13 | 19% |
| Stayed for >14 days | 8 | 12% |
| Ventilation | | |
| Needed ventilation | 5 | 7% |
| Average ventilation time in days (n=5) | 13.5 | |

## 4. DISCUSSION

This study aimed to evaluate major symptoms and outcomes of covid-19 positive patients. In this study, among the total of 67 patients, 70% were male whereas the rest 30% were female. So, the male-female ratio of the participants was 2.33:1. These findings were very similar to the findings of a study [11] conducted in China. The highest number of patients in this study were from the 51-60 years age group which was 27%. Then 3%, 21%, 16%, 12% and the rest 21% of patients were from 21-30, 31-40, 41-50, 61-70 and > 70 years age groups respectively; these findings are comparable with a study [12] conducted in Bangladesh. According to the BMI status of the patients, it was found that the majority portion patients were with normal body weight (BMI: 18.5-24.9 $Kg/m^2$) which was in 54% and the rest 46% were overweight (BMI: 25.0 to <30 $Kg/m^2$) status. In this study, in analyzing the clinical symptoms of the patients, we noticed that the highest number of patients were with cough (49%). Moreover, shortness of breath (39%) and hypoxemia/oxygen use (27%) were associated with a remarkable number of patients. All these symptoms were described in another study as major [13]. As a single comorbidity, HTN was found among the highest number of patients (15%). On the other hand, DM was present in 12%, CKD was present in 10% and CRD was present in 7% of cases which was also noticeable. All these findings were near about similar to the findings of another study [14] In assessing the outcomes, we found the cure rate up to 97% against 3% death. But a lower survival rate was found in those aged 75 years, which was described as a factor that increased the risk of death [15]. “Some studies had also shown that, the survival rate decreases in cases aged >60 years, and those with cerebrovascular disease, hematologic disease, diabetes, neurological disease, kidney disease, etc”. [16]. During the study period, 10% of our patients did not stay at the hospital at all, ventilation facilities were used in 7% of patients and their (n=5) average ventilation time was 13.5 days.

**Limitation of the study:**

Because of our limitations in managing study samples, logistic supports and manpower, we were bound to conduct this study on only 67 patients though, sapling rules demanded more. It was a single-centered observational cohort study with a small-sized sample. So, the findings of this study may not reflect the exact scenario of the whole country.

## 5. CONCLUSION & RECOMMENDATION

According to the findings of this study, we can conclude that, for Covid-19 patients, cough and shortness of breath are two major symptoms. To reduce the suffering, mortality and morbidities of Covid-19 patients, adequate ventilation and ICU facilities are necessary. Special care is needed for aged patients and cases with one or more comorbidities. For getting more specific results, we would like to recommend conducting similar studies in several places with larger-sized samples.

Consent

As per international standard or university standard, patient (s) written consent has been collected and preserved by the author(s).

Ethical Approval:

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

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