Original Research Article

Survival of COVID-19 Positive Patients: A Single Centered Comparative Study

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Abstract

Background: In Bangladesh for the first time, Covid-19 cases were detected in Dhaka city on the 8th March of 2020. Till then the number of Covid-19 patients is being increased. Covid-19 has the ferocious nature of affecting a large number of people within a couple of days. The mortality rate of Covid-19 differs by ages and places. In Bangladesh, we have not enough research-based information regarding the survival rate of Covid-19 positive patients. *Aim of the study:* The aim of this study was to assess of Covid-19 positive patient survival rate in Bangladesh. *Methods*: This was a prospective observational study conducted in the Department of Medicine Sher-e-Bangla Medical College Hospital (SBMCH), Barishal, Bangladesh during the period from July 2020 to 31 December 2020. In total 496 suspected Covid-19 patients who attended and completed full treatment tenure from 1 July 2020 to 31 December were selected as the study people for analysis. The study people were divided into two groups. In Group-I only death cases were enrolled and in group-II cured patients were enrolled. Before data collection, properly written consent was taken from all the participants. A pre-designed questionnaire was used in patent data collection. Data were analyzed by MS Office and SPSS version 24.0. *Result:* The age range of Group I patients was 16-90 which was 13- 90 in Group II. In Group I, the mean (±SD) age of the participants was 49.8±17.8 years, which was 43.9±16.7 years in Group II. We found a significant correlation in comparing the mean (±SD) ages of both groups of patients and the p- value was found 0.016. We observed, in Group I, 26% were Covid-19 positive whereas it was 15% in Group II. In total 3% (n=13) patients had been referred to other hospitals. Finally, in calculating the survival rate of Covid-19 positive patients in this study we found 89% had been survived. *Conclusion:* In this study, the survival rate of the Covid-19 patient was found lower than that of many other similar studies. Increasing several treatment facilities along with ventilation may reduce the mortality rate of Covid-19 patients in Bangladesh.
Keywords: Corona, survival, Covid-19, mortality, RT-PCR.

INTRODUCTION

In Bangladesh for the first time, Covid-19 cases were detected in Dhaka city on the 8th March of 2020. Till then the number of Covid-19 patients is being increased. Covid-19 has the ferocious nature of affecting a large number of people within a couple of days. The mortality rate of Covid-19 differs in several ages and places. In Bangladesh, we have not enough research-based information regarding the survival rate of Covid 19 positive patients. Several papers have been published regarding arthroscopically assisted. The novel coronavirus disease (Covid-19) is by far the most concerning the outbreak of atypical pneumonia since the far less detrimental 2003 outbreak of severe acute respiratory syndrome (SARS) [1]. The Covid-19 pandemic has been declared an international public

health emergency by the World Health Organization (WHO) [2]. As of July 1st, 2020, the Covid-19 pandemic has infected over ten million people across the world, causing more than 5,00,000 deaths [3]. Experts are still uncertain of the trajectory of the Covid-19 pandemic, the projected number of cases and deaths, or to what extent quarantine measures will disrupt daily life [5]. The unpredictable nature of this situation and uncertainty regarding Covid-19 can often trigger psychological distress and mental illness, including depression, anxiety, and traumatic stress [4]. Day by day the Covid situation in Bangladesh is worsening. The World Health Organization showed that 75% of 122 surveyed countries experienced disruption in NCD services during the pandemic.5 Moreover, the public's increased fear of Covid-19 or being diagnosed with Covid-19 has significantly affected their medical-seeking behavior and anxiety. Such attitudes were noted particularly in slums and in communities of low socioeconomic status in Bangladesh, Kenya, Nigeria, and Pakistan [6]. Excess mortality during the pandemic of Covid-19 has been premeditated by many authors. Wu *et al.*, [7] found 35% excess deaths in the UK. 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 major objective of this study was to assess the survival rate of Covid-19 positive patients in Bangladesh.

OBJECTIVES
General Objective
- To assess survival rate of Covid-19 positive patients in Bangladesh.

Specific Objective
- To collect information regarding the demographic status of participants.
- To collect information regarding the features and presentation of Covid-19 positive patients.

METHODOLOGY & MATERIALS
This was a prospective observational study, conducted in the Department of Medicine, Sher-e-Bangla Medical College Hospital (SBMCH), Barishal, Bangladesh during the period from July 2020 to December 2020. In total 496 suspected Covid-19 patients who attended and completed full treatment tenure from 1 July 2020 to 31 December were selected as the study people for analysis. Before data analysis, all the study people were divided into two groups. In Group-I only death cases were enrolled which were 53 and in group-II alieved patients were enrolled which were 443. Before starting data collection, properly

written consent was taken from all the participants. A pre-designed questionnaire was used in patent data collection. According to the inclusion criteria of this study, only RT-PCR confirmed Covid-19 patients from several age groups of both genders were included as study people. On the other hand, according to the exclusion criteria of this study, severely ill patients, pregnant women, patients of ICU or ventilation were excluded. During data collection and taking interview of participants as well as medical staffs appropriate social distancing were maintained. Data were analyzed, and disseminated by MS Office and SPSS version 24.0.

RESULT
In this study, among a total of 496 participants, the highest number of patients were from the 41-50 year's age group which was more than 21%. Besides this, 6.9%, 20.4%, 17.1%, 18.1%, 10.9%, 3.8% and 1.6% patients were from <20, 21-30, 31-40, 41-50, 61-70, 71-80 and >80 year's age groups respectively. Besides this, in Group I the highest number of patients was from 51-60 year's age group which was 24.5% and in Group it was from 41-50 year's age group which was 22.3%. The age range of Group I patients was 16-90 which was 13-90 in Group II. In Group I, the mean (±SD) of the participants was 49.8±17.8 years which was 43.9±16.7 years in Group II. We found a significant correlation in comparing the mean (±SD) ages of both groups of patients and the p-value was found at 0.016. In Group I, 85% of participants were male and the rest 15% were female. On the other hand, in group II, 73% were male and 27% were female. In the final result analysis of this study we observed, in Group I, 26% were Covid-19 positive whereas it was 15% in Group II. In total 3% (n=13) patients had been referred to other hospitals. From the same group, 4 patients had been released without any examination and 2 patients had been released against request. Finally, in calculating the survival ratio of Covid-19 positive patients in this study we found 89% had been survived successfully.

Table I: Age distribution of participants (N=496)

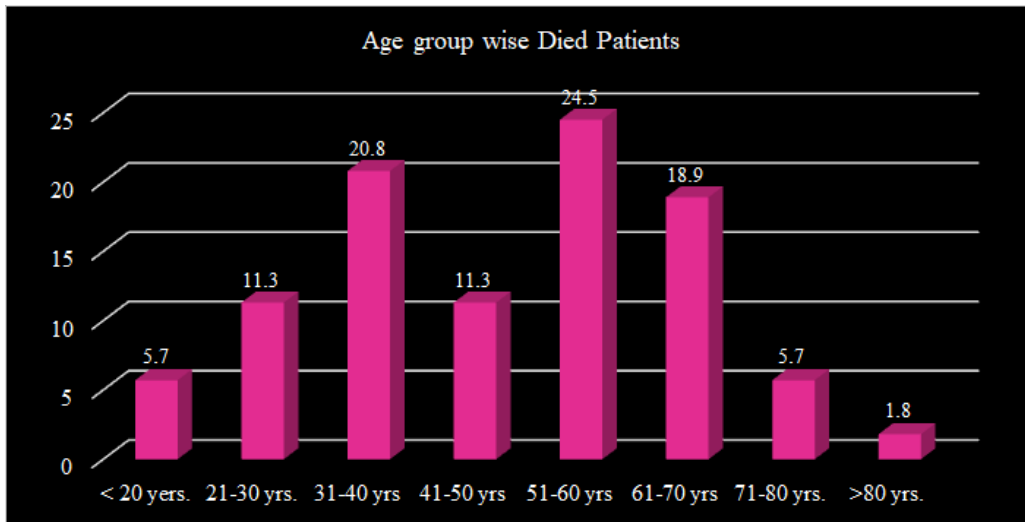| Age in year	Group I (n=53)		Group II (n=443)		Total (N=496)	
	n	%	n	%	n	%
<20	3	5.7	31	7	34	6.9
21-30	6	11.3	95	21.4	101	20.4
31-40	11	20.8	74	16.7	85	17.1
41-50	6	11.3	99	22.3	105	21.2
51-60	13	24.5	77	17.4	90	18.1
61-70	10	18.9	44	10	54	10.9
71-80	3	5.7	16	3.6	19	3.8
>80	1	1.8	7	1.6	8	1.6

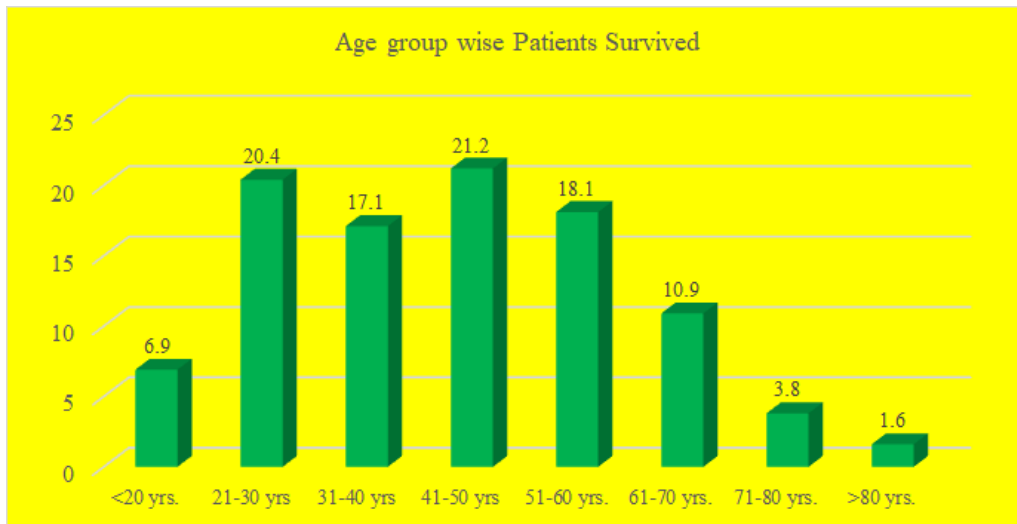**Figure I: Age Group Wise Died Patients Distribution**

Figure II: Age Group Wise Survived Patients Distribution

Table II: Comparison of ages between the groups (N=496)

Age (in year)	Group I (n=53)		Group II (n=443)		p- Value
	n	%	n	%	
Mean ± SD	49.8±17.8		43.9±16.7		0.016
Range (Min.-max.)	(16-90)		(13-90)		

Table III: Gender distribution of participants (N=496)

Gender	Group I (n=53)		Group II (n=443)		Total (N=496)	
	n	%	n	%	n	%
Male	45	84.9	322	72.7	367	73.99
Female	8	15.1	121	27.3	129	26.01
Total	53	100.0	443	100	496	100.0

Table IV: Distribution of the patients by final result (N=496)

Final Results	Group-I (n=53)		Group-II (n=443)	
	n	%	n	%
Positive	14	26.0	65	15.0
Referred	0	0.0	13	3.0
Release before sample collection	0	0.0	1	0.0
Runaway without notice	0	0.0	1	0.0
Release without examination	0	0.0	4	1.0
Abdominal pain and fever	0	0.0	1	0.0
Release with request	0	0.0	2	0.0
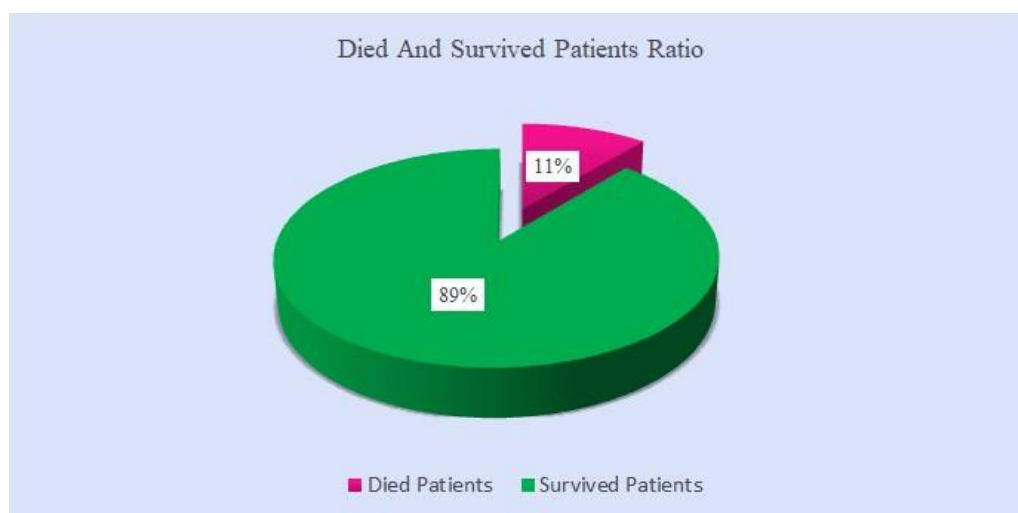
Figure III: Survival rate of covid-19 patients (N=496)

DISCUSSION

The aim of this study was to assess the survival rate of Covid-19 positive patients in Bangladesh. In our study, among a total of 496 participants, the highest number of patients were from the 41-50 year's age group which was more than 21%. Besides this, 6.9%, 20.4%, 17.1%, 18.1%, 10.9%, 3.8% and 1.6% patients were from <20, 21-30, 31-40, 41-50, 61-70, 71-80 and >80 year's age groups respectively. Besides this, in Group I the highest number of patients was from 51-60 year's age group which was 24.5% and in Group it was from the 41-50 year's age group which was 22.3%. The age range of Group I patients was 16-90 which was 13-90 in Group II. In Group I, the mean (±SD) of the participants was 49.8±17.8 years which was 43.9±16.7 years in Group II. We found a significant correlation in comparing the mean (±SD) ages of both groups of patients and the p-value was found 0.016. According to the data (Korea Disease Control and Prevention Agency, 2020) of confirmed Covid-19 in patients from 07 to 20 July 2020, the proportion was high at 41.6% among middle-aged patients aged 50 years and 50% of deaths were in patients aged 80 years, which showed high fatality rates. In addition, 97.7% of the deaths were in people who had an underlying disease [9]. Prior studies have suggested that this is related to the morbidity of severe Covid-19 in patients with chronic diseases [10] and that

the underlying disease may be a risk factor for severely ill patients [11]. Besides these, a lower survival rate was observed in those aged 75 years, which was identified as a factor that increased the risk of death [12]. The survival rate decreases in cases aged >60 years showed in the studies, and those with cerebrovascular, diabetes, hematologic, neurological, and kidney disease; these factors have been shown to affect death [13]. In the final result analysis of our study, we observed, in Group I, 26% were Covid-19 positive whereas it was 15% in Group II. In total 3% (n=13) patients had been referred to other hospitals. From the same group, 4 patients had been released without any examination and 2 patients had been released against request. Finally, in calculating the survival ratio of Covid-19 positive patients in this study we found 89% had been survived successfully. As per the findings of early studies in China after the outbreak of Covid-19, most deaths from Covid-19 in 2019 were in adults aged >60 years and people with serious underlying diseases. In the case of the United States, According to the results of an initial report in the case of United States, the mortality rate in those aged ≥85 years was highest among the above, followed by 65-84 year's, and the number of hospitalizations and ICU admissions was highest among those aged 65-74 years [14]. In Korea, the mortality rate was 79% among those aged ≥70 years and in the 296 Covid-19 patients who died, and there were more

severe patients in the 70≥79 years' age group9 Covid-19 is a highly hospitalization serious disease of ICU facilities hospitalization with mortality, so it is necessary to be active in policy measures such as social distancing to slow the spread of Covid-19 disease and to protect specially elderly patients

LIMITATIONS OF THE STUDY
This was a single-centered study with a small-sized sample. So, the findings of this study may not reflect the exact scenario of the whole country.

CONCLUSION AND RECOMMENDATIONS
In this study, the survival rate of Covid-19 patients was found lower than that of many other similar studies. Increasing several treatment facilities along with ventilation may reduce the mortality rate of Covid-19 patients in Bangladesh. For getting more reliable information we would like to recommend conducting more studies in several places with larger-sized samples.

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