The Factors behind the Highest Mortality Rate of COVID-19 at West Bengal in India up to May, 2020

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Abstract

COVID-19 is the worst pandemic worldwide in this century. It originated in China (Asia) but shows the maximum mortality rate in Europe and America. The fatality rate in India is 2.87 percent (up to May 25, 2020) where West Bengal has the highest rate among all the states and UT in India. The advanced medical system is supportive to reduce the mortality rate but it is not the ultimate solution and that's why European and American countries have higher rates. The higher fatality rate in West Bengal probably associated with multiple reasons such as medical mismanagement, admitted at the last moment, less number of tests, physically weak population and geographical position.

Keywords: COVID-19; Pandemic; Mortality rate West Bengal; India.

The most cited word in 2020 is COVID-19 and probably it is going to be the most used word in this century along with the prefix pandemic. The pandemic started in November 2019 at Wuhan, China (WHO, 2020). Though the origin of this pandemic virus is not clear, most reports say that it originated from a bat and spread from an animal market of Wuhan. The virus is called as COVID-19 in short because of the name Coronavirus diseases which was started at the end of 2019. The virus is also known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The coronavirus was there in previous years which causes common cold but some variants also caused severe acute respiratory syndrome (SARS) (ICTV, 2019) and the Middle East respiratory syndrome (MERS) (Groot, et.al, 2013).

The previous variants of this virus were not so dangerous but this COVID-19 is highly contagious and hence spread rapidly throughout the globe. The first report was on November 2019 whereas within three months i.e. at the end of January 2020 it was found

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in about 147 countries and killed more than 7800 people (Sullivan et al., 2020). The age of this virus is about seven months and we know very little about the virus at this point but we do know that the infected persons may have a fever, dry cough, respiratory distress, sore throat, and patient may rapidly deteriorate to the point of intubation (Sullivan et al., 2020) (Gotzsche, 2020). The mortality rate is 6.30 percent worldwide whereas it is only 2.87 percent for India.

In this report, we are going to discuss how the mortality rate varies among different provinces in India and how the situation may be improved for the states with higher rates of deaths.

There are no proper antiviral drugs or vaccines developed for the treatment of COVID-19 infection. Therefore, the cure of a patient depends upon the antibody development within the body because our body has its own mechanism for preventing any disease. The medical support is requiring to extend the life span i.e. it giving time to the body for developing antibody (Gotzsche, 2020). Therefore, we may say that medical support is necessary for COVID-19 treatment but not sufficient. The development of antibodies takes the main role to cure a patient and this can be explained on the basis of mortality rate in different countries.

Figure 1a: Mortality rate in different countries
(Affected more than 20K up to May 25, 2020 are considered)

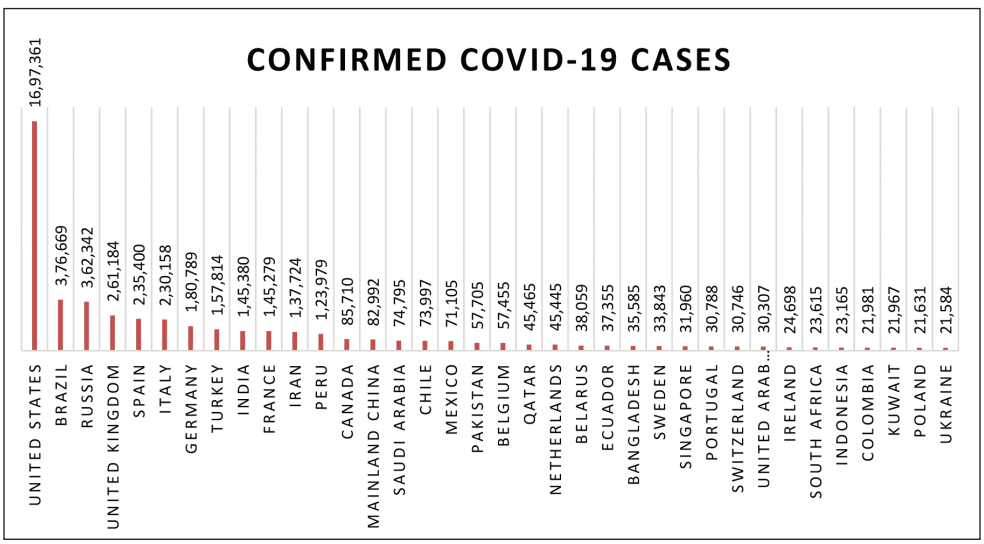
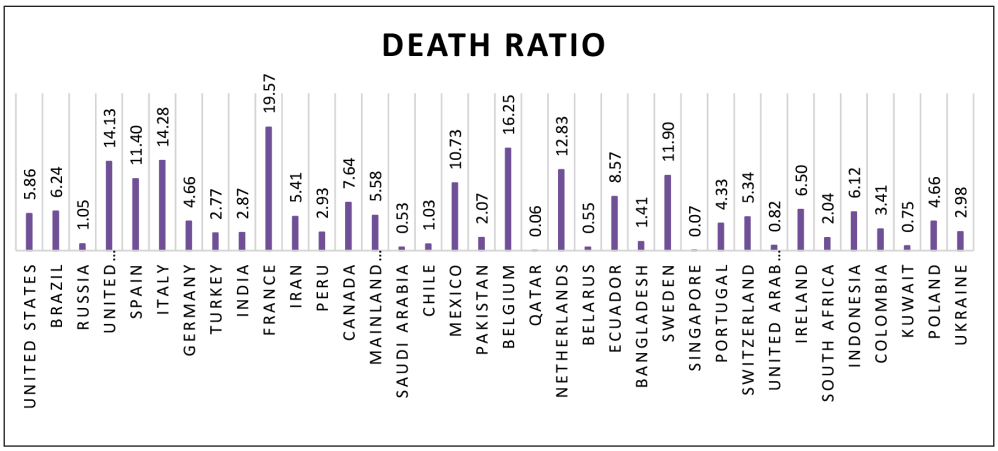


Figure 1b: Mortality rate in different countries
(Affected more than 20K up to May 25, 2020 are considered)



The Figures 1a and 1b says that the mortality rate for the USA, UK, Spain, Italy, France, etc. developed countries are much higher than several Asian countries (India, Bangladesh, Pakistan, Singapore, China, etc.) and African countries (South Africa) (WHO, 2020b). Now we can't say that all these Asian and African developing countries medical systems are much better than those developed countries. The mortality rate in Asian and African countries are less probably because of their 'geo-climate position' (hot regions) and they are little bit habituated with variants of SARS, MERS, etc. viruses and hence the human body has already developed mechanisms to prevent these. Therefore, we can conclude that developed medical systems may be supportive to cure/prevent COVID-19 pandemic but not the ultimate solution.

We are now focusing on the mortality rate in different states of India. We are seeing that the mortality rate for India is 2.87 percent (up to May 25, 2020) and the rate of its different provinces are shown in Figures 2a and 2b (Mygov, 2020).

Figure 2a: No of affected people in different states in India
(Affected more than 300 up to May 25, 2020 are considered)

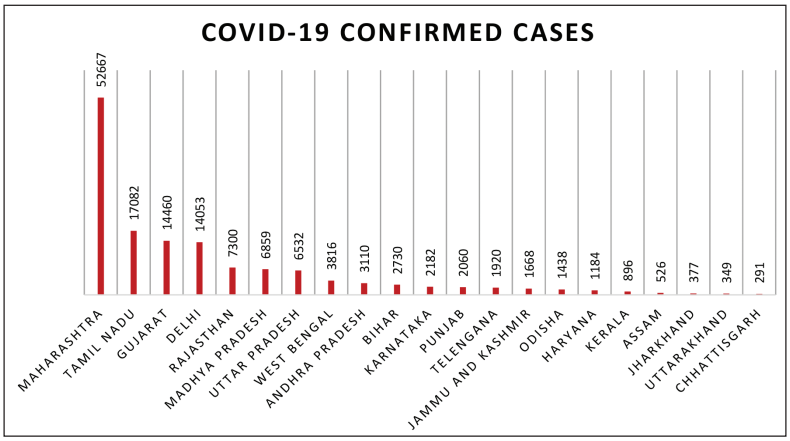
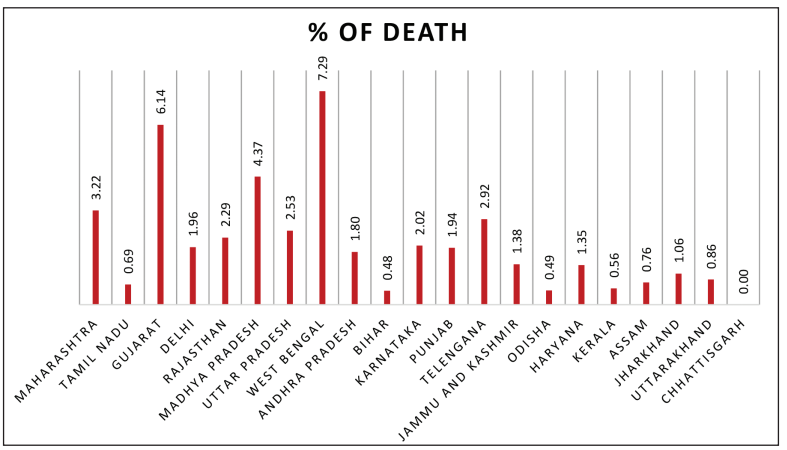


Figure 2b: Mortality rate in different states in India
(Affected more than 300 up to May 25, 2020 are considered)



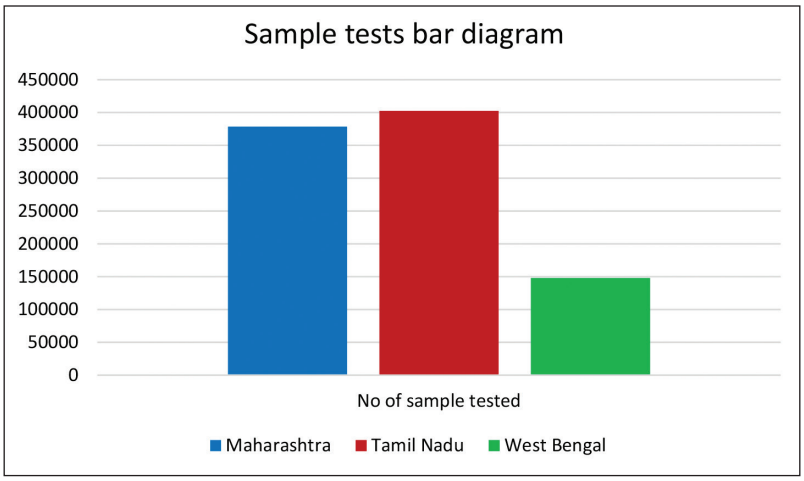
The number of COVID-19 cases is highest in Maharashtra (52,667) and about 14 times than West Bengal (3816) whereas the death ratio is highest for West Bengal. The number of affected cases in Tamil Nadu is second highest (17,082) but its mortality rate is tremendously low 0.69 percent. Gujarat is third in a number of infections (14,460) but second in mortality rate of 6.14 percent. The mortality rate is above 4 percent in three states only and these are West Bengal, Gujarat and Madhya Pradesh. The number of infections is mainly depending upon violating the social distancing (Henry, 2020) however, the mortality rate depends upon so many factors as given below.

Medical mismanagement: Proper medical support enhances the life span in critical situations. As we previously discussed, medical support is required for the patients who take a longer time to develop antibodies (self-defence system). Therefore, medical mismanagement may enhance the fatality rate.

Admitted at the last moment: If ais patient admitted at the last moment in a hospital, then the patient may face multi-organ failure before getting proper treatment in a critical care unit and hence the chances of mortality will be more.

Less number of tests: More number of tests identifies infections in the preliminary stage and therefore prevention of social transmission becomes possible and at the same time a patient will get proper medical support when required. Less number of tests also related to the previous point i.e. admitted at the last moment. The number of samples tested in west Bengal is much less in comparison to Maharashtra and Tamil Nadu as shown in Figure 3.

Figure 3: Comparison of sample testing in West Bengal

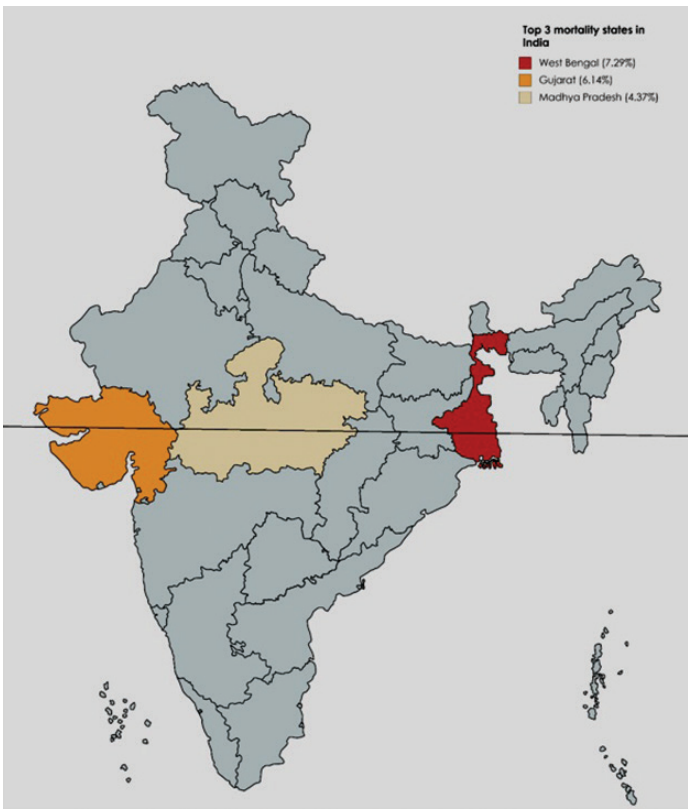


Research also doubts that the low death rate of Africa may be caused by less testing rates, and as of August 2020, the death curve of Europe is found to decrease whereas, for the Asian countries, it is increasing. Therefore, a number of tests play an important role in mortality rate (BBC, 2020).

Physical fitness: The cure of an infected person depends upon how fast the body develops antibodies. Now, a physically fit person with more immunity power gets antibodies in early to go to critical conditions. A physically weak person may go critical conditions before developing the antibody and hence have a higher rate of fatality.

Now West Bengal is mostly ina plain agro-climate zone for which the peoples are physically less fit compared to naturally hard lifestyle people. Therefore, the fatality rate in the plain agro-climate zone is expected to be higher. This is also applicable for Gujarat.

Figure 4: Top three mortality state in India up to May 25, 2020



Geographical region: Previously we have seen that mortality rates in Asian and African countries are less than American and European countries because of their geographical location and corresponding weather. Now West Bengal, Gujarat and Madhya Pradesh lie on a line going through the centre of Indian political map. Therefore, some geographical and corresponding weather may also affect the mortality rate. The report says that the effect of COVID-19 spread observed along the latitude within a country (CEBM, 2020). Although Jharkhand also lies along the line drawn in Figure 4, however effect of COVID-19 is not much strong may be due to its different population density as well as different land surface nature in comparison to West Bengal, Madhya Pradesh and Gujarat.

In conclusion,[11] the higher mortality rate of COVID-19 in West Bengal and Gujarat are associated with multiple reasons and the rate may be reduced by following preventive ways.

- Proper medical management support
- More number of tests and hospitalisation at an early stage
- Social distancing
- Physical and mental health awareness
- Social support system
- Economic security to the marginal peoples
- Spiritual resources i.e. spiritual gathering with obeying the standard operating protocol
- Obligation to others i.e. everyone has to take responsibility
- Willingness to seek help
- Future-oriented professional risk management plan

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Note

1. All the data are collected from the government of Indian and WHO website on 26 May 2020 morning i.e. up to 25 May 2020.

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