



Comparison Study of COVID-19 Pandemic Scenario in Emerging Market and Regulatory Market

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ABSTRACT

The corona virus (COVID-19) pandemic, a zoonotic disease transmitted from bat to human originated in Wuhan, China, has rapidly spread to several countries, with various cases having been reported globally. The second wave of the corona virus is spreading like a tsunami and is growing at an alarming rate compared to the first wave. It has been seen that the mutant virus is more transmissible and its incubation period is shorter. This article mainly deals with the number of people affected in the 1st and 2nd waves of COVID-19 in India and other countries. The study included all the cases reported from March 3, 2020 - August 31, 2021. The condition of the USA is even more critical than India, Brazil, Russia, United Kingdom, France, Turkey, Argentina, Italy, and other countries. The US has reported the highest number of cases (38,802,453) while Colombia has reported the lowest number of cases (4,905,258).

Key Words: COVID-19, First/Second wave, Cases, Deaths, India

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INTRODUCTION

COVID-19, commonly known as a novel corona virus, is related to a human respiratory disease that was declared a global pandemic and epidemic in the first quarter of 2020 by the WHO [1-4]. The source of this fatal virus was the Wuhan city of Hubei province, China in December, 2019. After the prevalence, the world was under the COVID-19 network due to an escalation to a deadly epidemic. In early January, the first fatality was seen that resulted in known human-to-human transmission with direct or close contact with a diseased person [5, 6]. As per the latest data (August 31, 2021) more than 217,030,829 people are currently contaminated by the Novel Corona Virus worldwide, and close to 45,099,322 deaths are broadcasted from all around the world [7]. The top ten countries with the greatest number of COVID-19 patients are the US, India, Brazil, Russia, UK, France, Turkey, Argentina, Columbia, and Iran. The top countries reported with maximum deaths are the US, Brazil, India, Mexico, Peru, Russia, United Kingdom, Indonesia, Italy, Columbia, France, and

Argentina. In most countries, the first wave of COVID-19 has been reported from March, 2020, but only a few countries have reported the cases from December, 2019 and January, 2020 [7].

MATERIALS AND METHODS

Data source

Data were collected using the literature sources and WHO, related countries databases.

Study duration

The study was carried out from March, 2020 to August, 2021.

Study criteria

The research is done regarding the following criteria.

Inclusion criteria

Patients who are suffering from COVID-19

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Exclusion criteria

COVID-19 Symptom-free patients.

RESULTS AND DISCUSSION

Scenario of COVID-19 in India

Currently, India is seen by many countries as a world leader, and even the WHO recognizes that the world is moving towards India's policies to contain the epidemic of this disease. India includes almost one-fifth of the people in the world and is the second crowded country in the world [1]. As of August 31, 2021, 32,768,880 confirmed cases of COVID-19 had been reported to WHO, with 438,560 deaths [8]. As for cases of Corona, the 1st COVID-19 patient was reported in India on January 30, 2020. The first patient was a student returning from Wuhan. Later, only 2 more cases were reported in February. Then the first wave of halo started, and more cases occurred in March, and the number of cases has skyrocketed since the second half of April, 2020 [1]. The second wave began in mid-March 2021, and the highest number of cases (144,829 cases) was identified in India, on April 9. Kerala, Andhra Pradesh, Karnataka, Maharashtra, Delhi, West Bengal, Uttar

Pradesh, and Tamil Nadu are the main states affected due to COVID-19 [9].

Statewise analysis

Maharashtra

Maharashtra is listed as a highly infected state in India concerning the COVID-19 infection [10]. As of August 31, 2021, there have been 64.65L verified COVID-19 cases with 137,313 deaths [11]. The 1st verified virus case was reported in Pune on March 9, 2020, when a couple who returned from Dubai tested positive. The next day, three more people were positively tested in the city where they contacted the couple [12]. During the first wave, Maharashtra reported a major spike in corona cases and deaths in September, 2020, with a number of 591,905 and 12,079. The lowest corona cases (302) and deaths (449) were spotted in March and April, 2020. During the 2nd wave, the highest number of corona cases (1,789,492) recorded deaths in April and June, 2021. The minimum number of corona cases is identified in August, 2021 (161,161) and deaths (1,072) in February 2021 (**Figure 1**) [13].

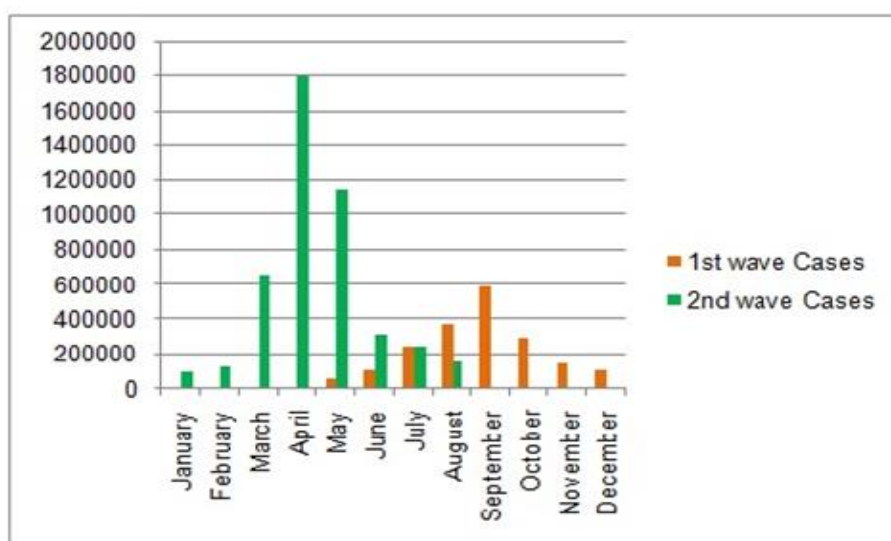


Figure 1. Total number of verified COVID-19 patients during 1st and 2nd waves in Maharashtra

Kerala

Kerala was the first state in India to be hit by COVID-19, with the corona virus case being verified in the Thrissur district on January 30, 2020. Because of many cases imported from other nations and states, the state rapidly had the highest number of active cases in India by early March [14]. COVID-19 has been confirmed in 4,057,231 people, with 20,788 deaths as of August 31, 2021. Kerala experienced a huge surge in corona cases in October, 2020,

with a total of 236,999 and the majority of deaths (282) in December, 2020 during the first wave. The lowest corona cases (238) and deaths (1) were recorded in March and April, 2020. In the 2nd wave, the highest number of corona cases (955,396) and deaths (4,420) were recorded in May and June, 2021. The minimum number of corona cases (65,181) and deaths (424) are diagnosed in June, 2021 (**Figure 2**) [15].

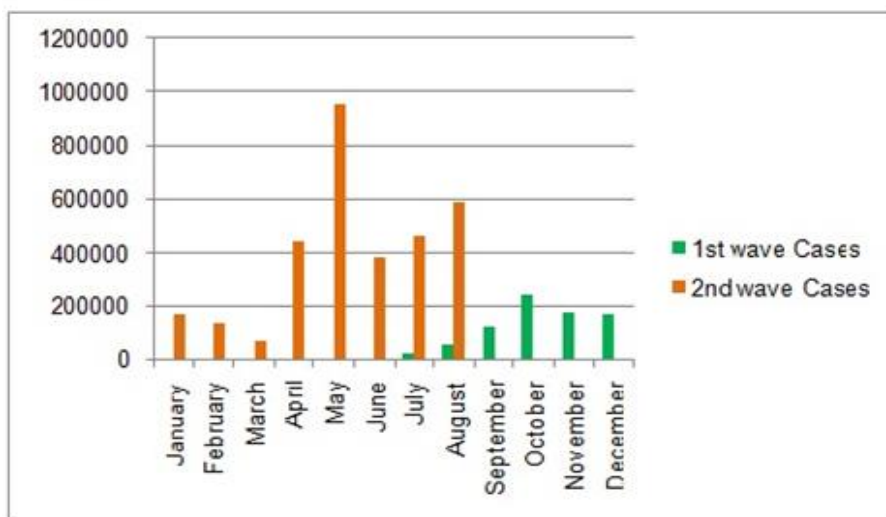


Figure 2. Total number of verified COVID-19 patients during 1st and 2nd waves in Kerala

Andhra pradesh

The first Novel Corona Virus infection, which has caused a pandemic resulting in terrible health implications and human miseries throughout the world, was identified in Andhra Pradesh on March 12, 2020. As of August 31, 2021, there were 20.14 L confirmed COVID19 cases with 13,857 deaths [16]. During the first wave, Andhra Pradesh reported a sharp increase in corona cases in the same month

with 293,838 and most of the 2,620 deaths in August 2020. The lowest corona cases (44) and deaths (0) were recorded in March 2020. The second wave recorded the highest number (591,395) in May, 2021, while the maximum deaths were recorded in the same month (2,938), the minimum number of corona cases in February 2021 (2,081), and the deaths of 16 in the same month (Figure 3) [17, 18].

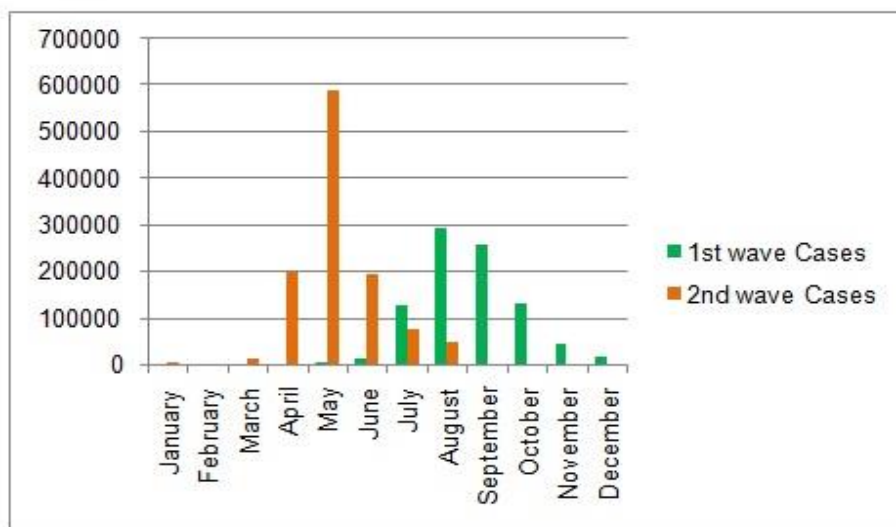


Figure 3. Total number of verified COVID-19 patients during 1st and 2nd waves in Andhra Pradesh

Delhi

On March 2, 2020, the 1st case of COVID-19 infection was reported in Delhi. As of August 31, 2021, there have been 14.38L verified cases of COVID-19, of which 25,082 were deaths [19]. In the first wave, Delhi reported a significant increase in halo cases in November, 2020, with 182,758 and 2,269 deaths in June. The lowest corona cases (120)

and deaths (2) were recorded in March, 2020. In the second wave, the highest number of corona cases (483,900) was registered in April, 2021, while the maximum number of deaths was recorded in May, 2021 (8,090). The minimum number of corona cases is determined in August, 2021 (1,449) and the deaths of 29 in the same month (Figure 4) [20].

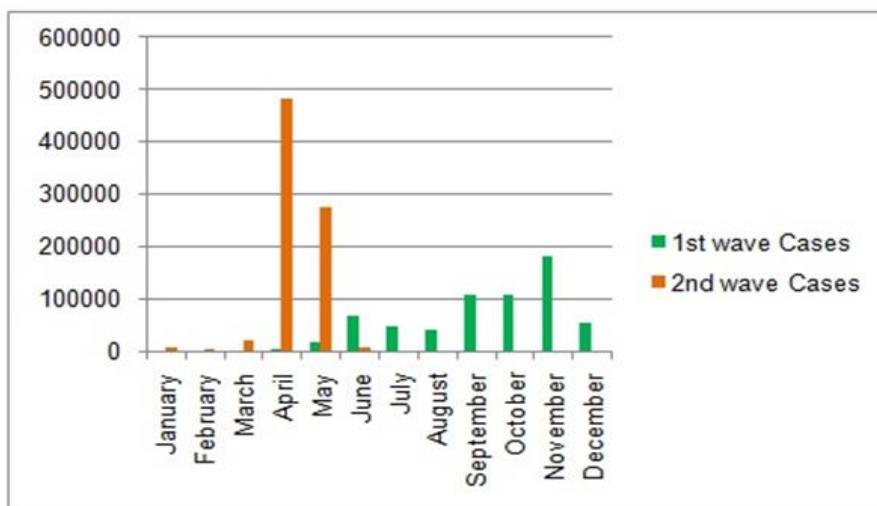


Figure 4. Total number of verified COVID-19 patients during 1st and 2nd waves in Delhi

Scenario of COVID-19 in the US

The first case of COVID-19 infection in the United States was reported on January 20, 2020 [21]. As of August 31, 2021, there have been 38,802,453 verified cases of COVID-19 with 633,576 deaths [22]. During the first wave, the United States reported a major spike in corona cases in December, 2020 with 6,211,222 and most deaths of 75,157 in the same month. The lowest corona cases

(145,687) and deaths (2,643) were spotted in January, 2020 and February, 2020. During the second wave, the highest number of corona cases (6,283,671) was recorded in January, 2021, while the maximum number of deaths in the same month (98,293). The minimum number of corona cases is identified in June, 2021 (388,625) and the deaths of 8,416 in July, 2021 (Figure 5) [22].

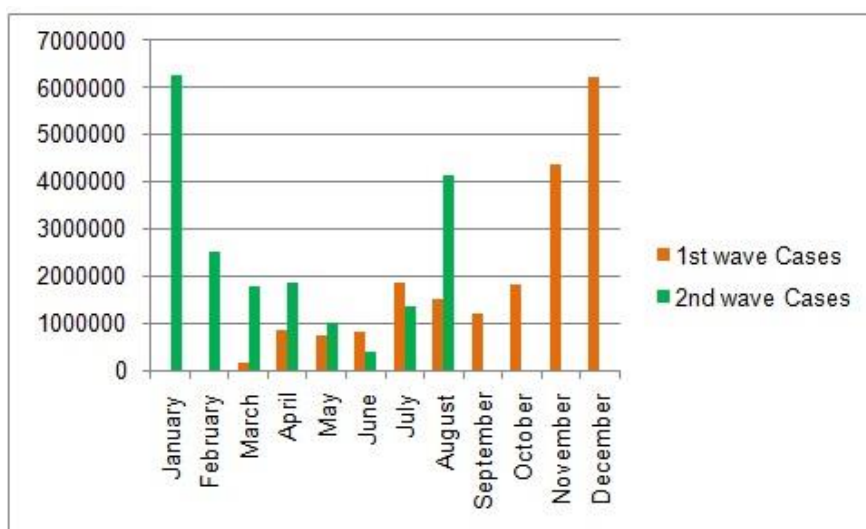


Figure 5. Total number of verified COVID-19 patients during 1st and 2nd waves in the United States

Scenario of COVID-19 in Brazil

On February 26, 2020, the 1st case of COVID-19 infection was reported in Brazil. COVID-19 had been confirmed in 20,741,815 people as of August 31, 2021, with 579,308 deaths [23]. During the first wave, Brazil reported a major spike in corona cases in August, 2020 with 1,293,888 and most deaths of 32,512 in July. The lowest corona cases

(4,251) and deaths (136) were spotted in January, 2020. During the second wave, the highest number of corona cases (2,117,985) was recorded in March, 2021, while the maximum number of deaths was in April, 2021 (84,319). The minimum number of corona cases are identified in August, 2021 (902,446) and the deaths of 24,811 in the same month (Figure 6) [23].

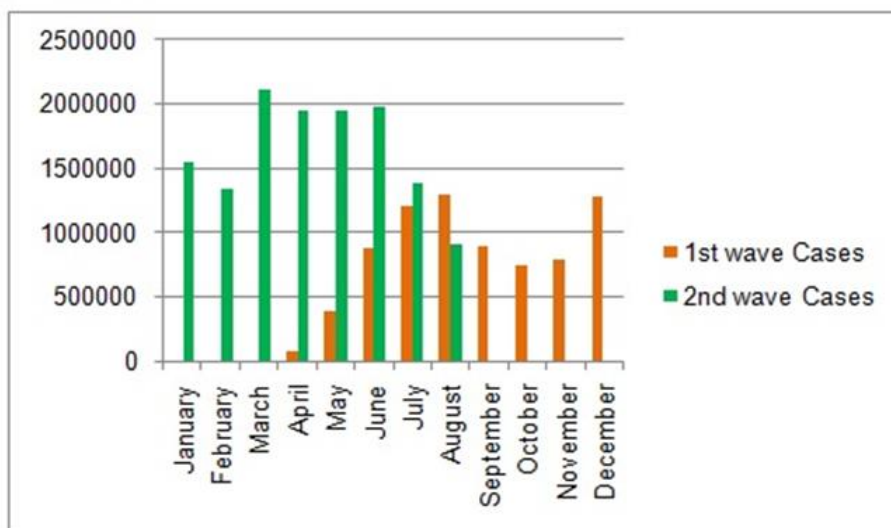


Figure 6. Total number of verified COVID-19 patients during 1st and 2nd waves in Brazil

Scenario of COVID-19 in Russia

On January 31, 2020, the primary case of covid-19 infection was reported in Russia. There have been 6,918,965 confirmed cases of COVID-19 as of August 31, 2021, with 183,224 fatalities [24]. Russia had a considerable rise in corona cases in December 2020, with a total of 863,643 cases and 17,124 fatalities. The month of

March 2020 has the lowest number of corona cases (2,335) and fatalities (17). The largest number of corona cases (751,274) were registered in July 2021, whereas the highest number of fatalities occurred in August 2021. (24,661). The lowest number of corona cases (240,173) are recorded in May 2021, with 11,278 fatalities recorded in April 2021 (**Figure 7**) [24].

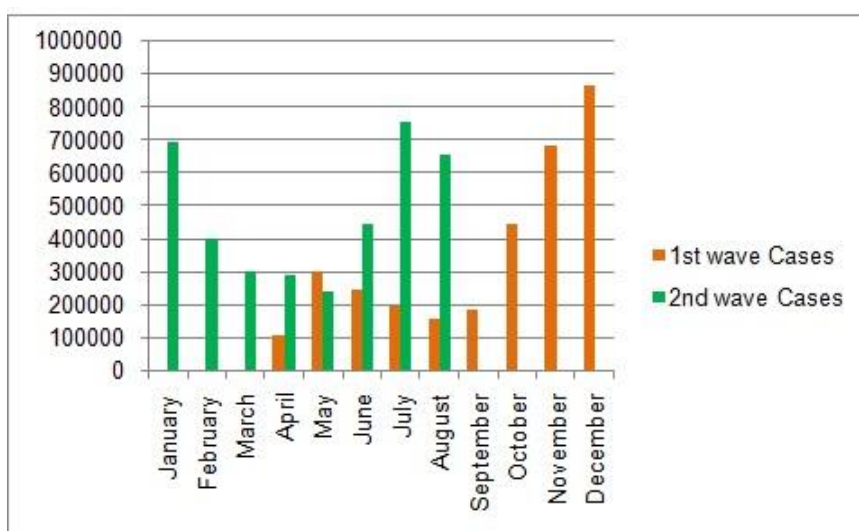


Figure 7. Total number of verified COVID-19 patients during 1st and 2nd waves in Russia

Scenario of COVID-19 in UK

COVID-19 infection was first detected in the UK on February 1, 2020. COVID-19 had been confirmed in 6,757,654 people as of August 31, 2021, with 132,485 deaths [25]. During the first wave, the United Kingdom experienced a significant increase in corona cases, with 898,253 cases reported in December, 2020 and 23,999 deaths reported in April. In August, 2020, the lowest corona cases (20,464) and deaths (330) were recorded.

During the second wave, the highest number of corona cases (1,285,822) were registered in January, 2021, while the highest deaths were in the same month (33,023). The month of May, 2021 has the lowest number of corona cases (69,841) and the highest number of deaths (279) [25].

Scenario of COVID-19 in France

On January 24, 2020, France reported its first case of COVID-19 infection. As of August 31, 2021, there have been 6,556,697 verified cases of COVID-19, of which

112,647 people have died [26]. During the first epidemic wave, France reported a significant increase in corona cases (925,313) in October, 2020, and most of the deaths were 21,037 in April, 2020. It had the lowest corona cases (11,138) and the number of deaths (331) detected in June, 2020 and August, 2020. In the second wave, March, 2021 recorded the highest number of corona cases (836,770), and January, 2021 had the highest number of deaths (11,462). The minimum number of corona cases (95,959) was determined in June, 2021, and 644 deaths were determined in July, 2021 [26].

Scenario of COVID-19 in Turkey

The first case of COVID-19 infection in Turkey was reported in Turkey on March 11, 2020. As of August 31, 2021, the confirmed cases are about 6,366,438 COVID-19 with 56,458 deaths [27]. During the first wave in December, 2020, Turkey has reported a major spike in corona cases with a number of 793,843 and most deaths of 7084 in the same month. The lowest corona cases (10,827) and deaths (168) were spotted in March, 2020. During the second wave, the highest number of corona cases (1,510,820) were recorded in April, 2021 and lowest number in February, 2021 (222,263), while the maximum number of deaths in the same month (8352) and the minimum deaths were about 1566 in July, 2021 [27].

Scenario of COVID-19 in Argentina

The first case of COVID-19 infection in Argentina was reported on March 3, 2020. As of August 31, 2021, there have been 5,173,531 verified cases of COVID-19 with 111,383 deaths [28]. During the first wave, Argentina reported a major spike in corona cases in October, 2020, with a number of 420,668 and most deaths of 14,329 in the same month. The lowest corona cases (820) and deaths (20) were spotted in March, 2020. During the second wave, the highest number of corona cases (803,373) were recorded in May, 2021, while the maximum deaths were in June, 2021 (16034). The minimum number of corona cases is identified in February, 2021 (188,835) and the deaths of 3665 in March, 2021 [28].

Scenario of COVID-19 in Colombia

The first case of COVID-19 infection reported on March 10, 2020. By August 31, 2021, 4,905,258 verified cases of COVID-19 had been reported with 124,811 deaths [29]. During the first wave, Colombia recorded a spike in Corona cases in August, 2020 and the most deaths in that month with 9,610. The lowest corona cases (702) and deaths (10) were spotted in March, 2020. During the second wave, the highest number of Corona cases (824,133) and deaths (17,579) were recorded in July, 2021. The minimum number of confirmed cases is

observed in August, 2021 (138,429), with deaths of 3,561 in March, 2021 [29].

CONCLUSION

Viruses are deadly and inflict unimaginable losses to mankind. A similar situation has arisen with introducing a corona virus strain that has not previously been recognized. It is an unprecedented coronavirus outbreak in the 20th century, which is not exactly the epidemic of a single country but the whole world. The United States has always been the first country to report the highest COVID cases in the first and second waves. In contrast, the countries with the least number of cases reported in the first and second waves include Colombia and Russia. India takes the second position in reporting the highest number of cases. We have to be aware of the challenge and concerns brought by COVID-19 to our community. It's time to make every effort to understand and control the illness and to act. Currently, there are many promising vaccine candidates, namely DNA/RNA vaccines, protein subunit vaccines, viral vector vaccines, and live virus vaccines. The first wave may be too late for a vaccine, but this pandemic works as a signal from the scientific community as we are more prepared to tackle future COVID infections.

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