

COVID-19 & Quarantine Measures: A Comparison between India & Russia

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Abstract

The Governments of the different countries are taking a wide range of measures in response to the COVID-19 outbreak. For assessing the rigour of quarantine measures, the Blavatnik School of Government at the University of Oxford has launched the world's first COVID-19 government response tracker—the Oxford Coronavirus Government Response Tracker – OxCGRT). This tool aims to track and compare policy responses of governments around the world, rigorously and consistently. According to the COVID-19 Government Response Stringency Index (GRSI) the strictest measures are in India (97.37 points) and less stringent ones are in the Russian Federation (63.89 points). The study compares restrictive measures in India and Russia, analyses their impact on the spread of COVID-19; and estimates mortality rates. Besides, the study also probes population coverage aimed at diagnosing through the use of testing methods and possible economic consequences of quarantine measures.

Keywords: Quarantine in India; Quarantine in Russia; COVID-19 Pandemic Growth; Population Coverage by Testing for COVID-19

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Introduction

The first mention of SARS coronavirus dates back to 2002, when an outbreak of severe acute respiratory syndrome characterised by severe pneumonia and respiratory failure was recorded. Viruses of this type have been detected in bats. On 12 December 2019, an outbreak of pneumonia caused by the SARS coronavirus, subsequently named COVID-19, began in Wuhan, the capital city of the Hubei Province, People's Republic of China. It is believed that people were infected with this virus in the seafood market (Zhou et al., 2020). It should be noted that China informed WHO about the emergence of a new type of pneumonia only on 31 December 2019. On 11 February 2020 WHO named a new coronavirus disease – COVID-19. In a relatively short time, COVID-19 left the borders of China and spread to various countries. As a result, on 11 March 2020 WHO announced that the outbreak of COVID-19 had taken the shape of a pandemic (Chappell, 2020).¹

The pandemic of the new COVID-19 infection has been accompanied by a number of restrictive measures taken by governments in various countries. However, the stringency measures vary from country to country. Several universities (Imperial College London; The Blavatnik School of Government, & University of Oxford; John Hopkins University) and organisations, including the World Health Organization (WHO), have developed various methods/models to keep track of COVID-19 including the method to assess the rigour of quarantine. The Blavatnik School of Government at the University of Oxford developed the COVID-19 Government Response Stringency Index (GRSI). For its calculation of the latest version, it presents data collected from public sources on nine indicators: eight of them are policy-related, ranked on an ordinal scale (school closure; workplace closure; cancellation

of public events; cancellation of gatherings; public transport closures; stay-at-home restrictions, restriction on internal movement; international travel control) and one is financial-support for population incomes. The maximum index value is 100, and the minimum is 0 points (Blavatnik School of Government, & University of Oxford, 2020). This allows the parties concerned to examine differences in government responses and compare them with the number of COVID-19 cases. It is important to note that the index does not aim to measure countries' appropriateness or effectiveness, but instead offers them an opportunity to compare responses to quarantine measures and learn from each other (Blavatnik School of Government, & University of Oxford, 2020).

Globally, it has been noted that the government responses are becoming more stringent as the epidemic severity grows (Blavatnik School of Government & University of Oxford, 2020). The COVID-19 GRSI was calculated for different countries according to its old version, where the parameter "stay-at-home restriction" was not taken into account. According to OXCGRT estimates the most stringent restrictive measures were taken in India (the COVID-19 GRSI 97.35 points), less stringent measures were implemented in Italy (93.25 points), Spain (89.41 points), France (89.41 points) and Russia (63.89 points).² Studying the effect of various severity of infection spread; restrictive measures on economic and social life will allow us to find the optimal balance between them in the event of epidemics and pandemics in the future.

The review aims to compare isolation measures between India and Russia as both countries continue to maintain strong relations. It aims to analyse the results achieved to contain the COVID-19 epidemic. The findings reveal that measures of India as the most stringent, while the measures are least stringent in Russia.

¹ Rolling updates on coronavirus disease (COVID-19). World Health Organization. Retrieved on 18 June 2020 from, <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>

² Coronavirus Stringency Index: A look at Government responses to Covid-19 (2020, 30 March). Financial Times. Retrieved on 31 March 2020 from, <https://www.bsg.ox.ac.uk/node/5421>

The review begins with a discussion of the features of anti-epidemic measures in India. This is followed by a discussion of quarantine measures of the country. Then it goes on to critically discuss the restrictive measures and Covid-19 infection control results in Russia. The results and prospects are discussed in the final section.

Features of Anti-Epidemic Measures in India

The first COVID-19 case in India was reported on 30 January 2020. Then, on 2 and 3 February 2020 two more COVID-19 cases were detected. All three patients reported having travelled to Wuhan, China. After this, the infections were not recorded for a month, until 2 March 2020 when two new COVID-19 cases were reported. After this date, there was a significant increase in the number of positive patients. Until 25 March 2020 quarantine measures were only aimed at preventive work with the population. There were developed guidelines for personal hygiene, surveillance, contact tracing, quarantine, diagnostics, laboratory tests, and infection management. All who arrived in the country were asked to comply with the 14-day quarantine. People were advised not to visit public places and markets selling live animals. Medical centres were encouraged to provide only emergency services. Doctors received recommendations to use the telemedicine system to provide advice, including issues related to COVID-19 prevention and spread. By 25 March 2020 various public facilities, such as hotels, educational institutions, colleges, railway cars, were redesigned for temporary accommodation of quarantined people. Stadiums also began to be used as insulators for patients. Some Indian states redeployed hospitals to exclusively treat COVID-19 patients. On 21 March 2020, the country's Prime Minister, Mr Narendra Damodar Modi addressed the nation, announcing a 14-hour voluntary public curfew. And on 25 March 2020, strict quarantine measures were introduced in connection with the spread of the disease. During the quarantine period on 25 March 2020 562 COVID-19 infections were registered in India. 12 people died from it ; the daily increase in infection active

cases was 48 people (Diwanji, 2020a). At first, the period of restrictive measures was three weeks: from 25 March to 14 April 2020. On 14 April 2020 when 10 541 cases of COVID-19 were recorded in India, quarantine of similar severity was extended for another 19 days until 3 May 2020. In accordance with the measures taken, a "stay-at-home restriction" was imposed. Automobile, air and rail transport services were suspended, with the exception of vital goods transportation, fire, police and emergency services. Full-time activities of educational institutions, the work of industrial enterprises and hotel complexes were prohibited. Grocery stores, banks and ATMs, petrol stations, shops, e-commerce dealing with essential goods, and their production were exempt from taxes. The Ministry of Home Affairs (MHA) stated that anyone who did not comply with the restrictions might end up in prison for up to a year (Tripathi, 2020). Arrests were made in all states for violating quarantine standards, such as leaving home without a good reason, opening businesses, and violating quarantine requirements for building maintenance. To ensure a continuous supply of essential goods throughout the country during the entire quarantine period, it was recommended to use electronic resources (India Today, 2020). At the same time, several Indian states even banned food delivery services, despite the absence of a ban from the republican government (Verdict Foodservice, 2020).

Nevertheless, since 20 April 2020 the lockdown was slightly eased when the Government of India allowed opening an agricultural business, including a business related to the production and sale of dairy products, seafood/aquaculture, as well as shops selling agricultural goods. Some community work was allowed to be resumed following social distancing principles. Freight vehicles (vehicles, trains, planes) were allowed to travel around the country. Banks and government centres participating in preferential allocation of resources were also opened (BBC News, 2020a). From 25 April 2020 it was allowed to open small retail stores with 50% of employees, subject to mandatory observance of social distancing standards (Aleem, 2020). On 29

April 2020 the MHA developed guidelines for movement of people between states and also of those in distress. However, such residents still had to undergo appropriate checks, quarantine and surveillance (Jagannath, 2020).

On the last day of the most stringent quarantine measures, that is on 3 May, a total of 39 980 confirmed COVID-19 cases were recorded in India, the number of active cases was 27 838, the daily increase in active cases was 1 732, the total number of deaths was 1 323, amounting to 100 deaths per day. Moreover, the doubling time of the epidemic reached 12 days (Diwanji, 2020a). Before this, on 1 May the Indian government had divided the country into green, red and orange zones, where it was planned to conduct quarantine measures of various stringency (The Economics Times, 2020b). Territory division into zones was based on COVID-19 occurrence frequency. In the green zone, there should have been no cases of infection in the last 21 days. A high infection incidence and doubling characterised the red zone. The orange zone was represented by regions with few COVID-19 infections. So, from 4 May 2020 intercity buses with no more than 50% occupancy were allowed in green areas. In all the three zones, private offices with up to 33% of employees were allowed. It was possible to move on a two-wheeled vehicle without a passenger, on four-wheeled vehicles with a driver and two passengers. In red zones, the use of any public transport was still prohibited. In orange regions, only private transport in the form of a taxi with a driver and with no more than 2 passengers was allowed. A complete ban on movement from 7 pm to 7 am was introduced for all the three zones except for persons whose work was connected with strategic life support. Also, from 4 May 2020 rail transport, the metro, full-time activities of educational organizations, entertainment facilities, social events, temple visiting, intercity buses with more than 50% coverage, a taxi with a driver and more than two passengers (Table 1) (Banerjea, 2020) remain banned. Such restrictions persisted until 31 May 2020 (BBC News, 2020b), which is explained by the preservation of a sufficiently high rate of

COVID-19 distribution for the transition to the restriction lifting next stage.

Results of Quarantine Measures in India

The pandemic growth rate in India slowed down from doubling every 3-4 days (Senapati et al., 2020) before restrictive measures were introduced to doubling every six days by 6 April 2020 (Ramesh & Basu, 2020). By 19 April, infection cases doubling was recorded once every ten days (Basu, 2020). By 4 May 2020 its rate slowed even further to doubling every twelve days (Soni, 2020). Further, by 17 May, the epidemic doubling rate slowed down to 13.6 days (Table 2) (The Times of India, 2020). By the end of the third stage of quarantine measures, that is on 17 May 2020, the total number of COVID-19 cases reached 90 927, and the death toll increased to 2 872. The number of active cases was up to 53 831 (Business Standard, 2020). The total number of deaths from COVID-19 by 17 May 2020 was 83 people (Ritchie et al., 2020). Despite the most stringent restrictive measures, the epidemic continues to grow in India, but its pace is steadily declining (Diwanji, 2020) (Table 2).

Up to 17 May 2020, India daily performed 0.07 COVID-19 tests per 1 000 of the population. Throughout the epidemic, the testing frequency was 1.61 persons per 1 000, which is significantly less than in the leading countries and Russia, where at that time 47.39 COVID-19 tests were run per 1 000 people, and now 1.61 tests are done daily per 1 000 (Hasell et al., 2020) (Table 2). Currently, India has 23 times fewer tests than Russia. It should be assumed that insufficient diagnosis of COVID-19 mild cases and carriage due to the dominating performance of tests in patients with moderate to severe infection leads to higher mortality of COVID-19 patients in the Indian population compared to the Russian one. Thus, most countries in the pandemic's early stages did not aim to diagnose COVID-19 in individuals with mild symptoms (Sevillano et al., 2020). Analysis of the outbreak's early phase before 23 January showed that 86% of COVID-19 infections were not diagnosed, and these unregistered cases were the source of infection in 79% of people (Li et al., 2020). However,

official data provided by the Indian side do not confirm this point of view. On the contrary, they indicate that 75-80% of the detected COVID-19 cases in India were asymptomatic or mild, which was detected by testing (Dixit, 2020; The Economics Times, 2020a). Nevertheless, mortality from COVID-19 in India is more than three times higher than in Russia: 3.1% and 0.9%, respectively, which requires additional analysis (Table 2) (Ritchie et al., 2020).

Activities	Russia	India
COVID-19 GRSI in points	63.9	97.4
Maximum quarantine introduction	Not introduced	Introduced
Rail and metro	Allowed	Forbidden
Educational institutions	Full-time education prohibited	Full-time education prohibited
Cinemas, theatres, shopping and entertainment centres, cafes, restaurants and other leisure places	Activity paused	Activity paused
Places of religious services	Partially closed to visitors	Activity paused
Prohibition of any movement except for safety reasons from 7 pm to 7 am	Not introduced	Ban introduced
Taxi	Allowed	Forbidden
Intercity buses	Allowed	Forbidden
Air transportation of passengers	Paused	Paused
Leaving home	Allowed for walking animals, shopping for essential goods, visiting pharmacies and taking out garbage	Allowed only in emergency
Essential goods stores/e-commerce	Allowed	Allowed
Interstate and domestic movement of goods	Allowed	Allowed
Possible sanctions for unregulated leaving home	Fine	Arrest A year of imprisonment

Source: Authors

Restrictive Measures in Russia

During the COVID-19 spread in Russia, restrictive measures were not as stringent as in India (Table 1), and they were introduced gradually. From 16 March 2020 the Ministry of Science recommended that universities transfer to distance learning (Order of the Ministry of Science and Higher Education of the Russian Federation (dated 14.03.2020) No. 397, 2020). From 17 March 2020 schools of the Russian

Federation were transferred to distance learning (Order of the Ministry of Education of the Russian Federation (dated 17.03.2020) No. 104, 2020). On 27 March 2020 a total of 1 036 COVID-19 cases were registered in Russia in 58 regions with four fatal cases. Following Presidential Decree No. 206 of 25 March 2020 non-working days were established from 30 March 2020 except for organizations responsible for citizens and the state's livelihoods. These included continuously operating organisations: medical

facilities and pharmacies; organisations providing food and essential goods, and performing urgent work; institutions providing emergency financial services; other organisations operating under decisions of the supreme executive authority of the Russian Federation constituent entity, based on the sanitary-epidemiological situation and the COVID-19 spread. Activities not regulated by presidential decree were discontinued or transferred to a remote form. Unlike India, Russia maintained public transport operation. People were allowed to go out to walk animals, take out the garbage and buy essential goods. No curfew was imposed. Rail transport continued to operate, and citizens had the right to internal movement. 1.5 m social distance was introduced, excluding taxi rides. A similar regime was prolonged twice: from 5 April to 30 April 2020 (Decree of the President of the Russian Federation (dated 02.04.2020) N 239, 2020) and from 1 May to 11 May 2020 (Decree of the President of the Russian Federation (dated 28.04.2020) N 294, 2020). It should be noted that in Russia, the period of the most stringent restrictive measures was prolonged by 43 days, in India, by 40 days (Table 1). At the end of this period, a transition to gradual lifting of restrictive measures began in some regions.

Results of Covid-19 Infection Control in Russia

By 30 March 2020, the first day of restrictive measures, the total number of COVID-19 patients was 1 836, of which 1 761 were active cases, nine patients had died, two recovered. The estimated infection doubling rate was four days. By 19 April 2020, in the middle of the most stringent restriction period in Russia there were 42 853 cases of the infection, of which 39 201 were active, 3 291 patients recovered, 361 people had died. During the day from 18 to 19 April 2020 the number of active infections increased by 5 778. 234 people recovered, and 48 people died. Despite the epidemic growth, its pace was significantly reduced until the infection doubling in 6.6–6.7 days, which testified to the

effectiveness of the measures taken (Statista Research Department (SRD), 2020).

It should be noted that the epidemic in Russia also continues to grow at present, however, as well as in India, its pace is regressive. So, already on 11 May 2020 (the last day of the most stringent restrictions) infection doubling was observed in 16-17 days, and by May 17 there was a decrease in 21-23 days (Table 2). Statistics on 22 May 2020 show a slowdown in the pandemic growth to less than 3% per day.³ In Russia, the highest rates of population testing for COVID-19 on 17 May 2020 were 47.39 tests per thousand of the population. This figure continues to grow, and now it has already exceeded 50 per thousand, which largely explains such significant numbers of detected COVID-19 cases, which crossed the 300 000 thresholds. Such a wide population coverage makes it possible to detect mild and asymptomatic cases of the disease, take additional restrictive measures against identified individuals, start timely treatment and, thereby, reduce the likelihood of an epidemic spread and mortality from COVID-19, which is currently one of the lowest in the world.

Despite the absolute increase in mortality from COVID-19 in Russia, the relative mortality rate does not exceed 0.9%, while in India it is 3.1%, and on average in the world, it reaches 6.3-6.5% (Lazzerini & Putoto, 2020). It should be noted that by 22 May 2020 both in India and Russia there was a proportional increase in the number of deaths from coronavirus infection by two times, which is associated with a general increase in the number of active cases of the disease and, accordingly, its severe cases. (Ritchie et al., 2020). Very optimistic is the fact that the infected mortality rate (IFR) with a 95% probability indicates that, taking into account undiagnosed cases, the mortality rate from COVID-19 infection in the world is 0.94% (WHO, 2020). It is believed that 35% of people with COVID-19 have no symptoms at all; mortality in people with clinical manifestations ranges from 0.2% to 1% (Azad, 2020).

³³Daily COVID-19 case growth in Russia stays under 10,000 for seven days in a row (22 May

2020). TASS: Russian News Agency. Retrieved on 22 May 2020 from, <https://tass.com/society/1159177>

Table 2: Comparison of COVID-19 Containment Results in India and Russia						
Indicator	COVID-19 statistics in Russia on the first day of quarantine measures (30 March 20)	COVID-19 statistics in India on the first day of quarantine (25 March 20)	Russia on 11 May 2020	India on 3 May 2020	Russia on 17 May 2020	India on 17 May 2020
Doubling of infection cases/ days	≈4	3.3-4.3	16	12	21-23	13.6
Total number of cases	1 836	562	221 344	39 980	281752	90 927
Number of active cases (total)	1 761	519	179 539	27 838	211748	53 831
Deaths (total)	9	12	2 009	1 323	2 631	2 872
Number of the recoveries per day	2	3	5 495	812	4 207	3 926
Total recovered	66	43	39 801	10 819	67 373	34 224
Daily increase in active cases per day	299	48	6 067	1 732	9 333	5 408
Number of deaths per day	1	2	94	100	94	83
Number of cases per million of the population	-	-	≈1 200	≈29/ million	≈2 000/ million	≈65/ million
Number of tests per day per thousand of the population	<0.3	<0.1	1.4	<0.1	< 1.7	<0.1
Total number of tests per thousand of the population	2.4	<0.01	38.6	0.8	47.4	1.6
Mortality,% (ratio of mortality to the diagnosed case)	-	2.1	0.9	3.3	0.9	3.1
Mortality per million of the population	-	-	13.7	<1	17.4	2.1

Source: Authors

Mortality linked to COVID-19

According to the WHO situational report, as of 13 April 2020, the overall mortality rate from COVID-19 was 6.3% (WHO, 2020). The difference in mortality between countries is primarily due to the age structure of the sick. For example, high mortality rates are associated mainly with the older age of the deceased. So, in Italy, it was 80.5 years, with an average age of patients of 62

years (Ministry of Health, 2020). A similar trend exists in India, where the mortality rate of people over 60 was about 9%, with an average mortality rate of 2.7-3.1% (Narayan & Nagarajan, 2020). Moreover, the primary cohort of infected people in India was represented by persons aged 21-40 years, who had the lowest mortality rates (Diwanji, 2020b). A similar situation exists in Russia, where more than 43-46% of the infected are people aged 18-45, who have a relatively low

mortality rate. Moreover, people over 65 make up only about 15% of cases (SRD, 2020b). For comparison, in Italy, where the mortality rate from COVID-19 exceeds 14%, about 40% of patients were over 70 years old (SRD, 2020a).

WHO reports that more than 95% of deaths from COVID-19 in Europe occur among people over 60 years of age, and of these, there are more than 50% of deaths among people over 80. Moreover, 80% of the dead had at least one concomitant pathology (cardiovascular diseases, arterial hypertension, diabetes mellitus) (Kluge, 2020). The Korean example shows that although the overall mortality rate from COVID-19 is 0.9%, mortality among people aged 80 and over reaches 9.3% (Kang, 2020). Researchers from

other countries provide similar data. For example, according to them, mortality rates among people over 80 range from 7.8 to 30%, while in patients younger than 40 years, mortality rates usually do not exceed 0.3-0.4% (Mahase, 2020; Wisconsin Department of Health Services, 2020).

Currently, we can observe an increase in the number of coronavirus deaths. On 15 June 2020, the total number of deaths worldwide exceeded 430 thousand. The largest number of deaths is registered in the United States, but the highest mortality per million people is found in Belgium. Russia is in 36th place, and India is in 83rd place in the list of deaths number per million people (Table 3).⁴

Table 3: COVID-10 Mortality Rates per Million People in Different Countries (15 June 2020)

Countries	COVID-19 deaths	Population	Mortality per million
Belgium	9655	11.4	845.3
Spain	27136	46.7	580.8
Italy	34345	60.4	568.3
Sweden	4874	10.2	478.3
France	29360	67	438.7
US	115572	327.2	353.3
Canada	8218	37	221.8
Great Britain	41698	66.5	627.1
Russia	6938	144.5	48.02
India	9520	1352.6	7

Source: Coronavirus (COVID-19) deaths worldwide per one million population as of June 15, 2020, by country. Statistica. Retrieved on 15 June 2020 from, <https://www.statista.com/statistics/1104709/coronavirus-deaths-worldwide-per-million-inhabitants/>

COVID-19 infection analysis yielded data indicating that arterial hypertension, cardiovascular disease, diabetes mellitus, smoking, chronic obstructive pulmonary disease, malignant tumour and chronic kidney disease were the most frequently diagnosed pathologies

among inpatients (Emami et al., 2020). So, cardiovascular diseases can increase mortality from COVID-19 by 10.5%, diabetes by 7.3%, chronic respiratory disease by 6.3%, arterial hypertension by 6.0% and malignant neoplasm by 5, 6% (Wu & McGoogan, 2020). The risk of

⁴ Coronavirus (COVID-19) deaths worldwide per one million population as of June 15, 2020, by country. Statistica. Retrieved on 15 June 2020 from,

<https://www.statista.com/statistics/1104709/coronavirus-s-deaths-worldwide-per-million-inhabitants/>

severe COVID-19 cases and mortality was almost 2.5 times higher in patients with hypertension, especially among the elderly (Bulut & Kato, 2020). Mortality rates may also be affected by the features of counting such cases in different countries. For example, in the UK, Germany, Italy and several other countries any dead person infected with COVID-19 is considered dead from coronavirus infection in the presence of any concomitant pathology (Henriques, 2020). In Russia and India, there is another counting practice, when the COVID-19 diagnosis may not be the main one and, accordingly, mortality may be due to another disease (Biswas, 2020; RadioFreeEurope/RadioLiberty, 2020).

Thus, a severe disease course and COVID-19 related mortality are multi-factor processes that depend on the patient's age, concomitant pathology, and features of the death counting system.

Results and Prospects

COVID-19 quarantine measures have been adopted by almost all affected countries. India and Russia have started adopting the measures simultaneously. After this, there have been periods of gradual restriction lifting. It is worth noting that, due to stringency in restrictive measures in Russia and India, albeit in varying degrees, the measures displayed high effectiveness in combating the infection spread. It is important to note that to date, Russia has managed to achieve even more excellent results in limiting the spread of infection. So, on the date of 22 May 2020, a daily increase in the total number of COVID-19 cases by 2.8% was observed in Russia, while in India by 5%.^{5 6} For comparison, the daily epidemic growth in Russia exceeded 16%, and in India, it stood at 8% on the day of introduction of quarantine measures (Senapati et al., 2020; Teslova, 2020).

Russia managed to achieve a greater reduction in the COVID-19 spread during quarantine compared to India. This phenomenon should be

studied more deeply. Quite interesting is the fact that in countries where there were strict restrictive measures, for example, in Italy, France, Spain, the death rate from COVID-19 per million population was about the same as in Sweden, where there were no strict restrictive measures.

Restrictive measures in different countries have become a substantial economic burden. Thus, experts cite similar data for India and Russia on the decline in GDP (about 5%) caused by restrictive measures introduction (Choudhury, 2020; Sitdikov, 2020). Nevertheless, it should be assumed that milder restrictive measures may not be so destructive for the state's economic and social life and are most preferable provided that the fight against the spread of infection is highly effective. All this indicates the need for further epidemiological, economic and sociological studies, which will provide more accurate information on the impact of the restrictive measures on the economic, political and social life of various countries.

Conclusion

This study has discussed the quarantine measures adopted by India and Russia in their attempt to combat COVID-19. In doing so, the study draws the following conclusions:

Quarantine measures in India and Russia have shown a high degree of effectiveness. By 22 May 2020, the daily growth of COVID-19 in Russia decreased almost six times, in India - 1.7 times.

According to the results of 2020, the Gross Domestic Product (GDP) of India and Russia may decrease by equal 5% from the initial indicator, despite the difference in the restrictive measures severity degree.

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⁵ Please refer to footnote 3

⁶ Coronavirus COVID-19 cases in India cross 1.1 lakh, death toll stands at 3435. *Zee News*. Retrieved on 22 May

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