

## COVID-19: Trends in India and the World

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As the global COVID-19 cases exceed 2.6 Million with over 184,000 fatalities, the unpredictable virus continues to wreak havoc across over 200 countries across the world. In addition to the severe impact on lives and livelihoods, hunger is also emerging as a core issue. A new World Food Programme analysis shows that as a result of COVID-19, an additional 130 million people could be pushed to the brink of starvation. This is in addition to the current 821 million people who go to bed hungry. These statistics are concerning and the world must unite, pool resources and jointly battle this pandemic. In order to do this, it is important to understand the difference in the spread and impact of COVID-19 across countries.

The impact of the virus has varied across countries but the effect of the novel coronavirus in India is significantly different from the manner in which it has impacted other countries across the globe. In order to understand these developments and gain some context, it is important to begin with the chronology.

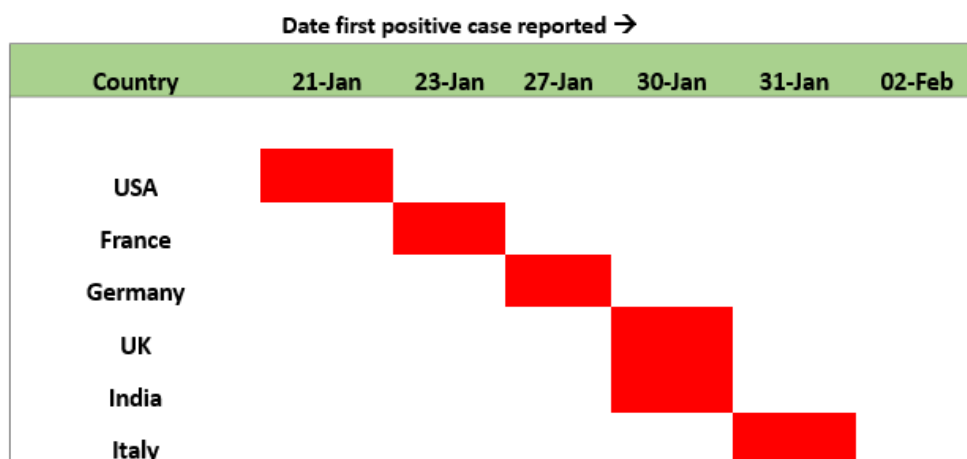


Figure 1: Date of first reported case

We are aware that the virus originated and spread in China first, but the cases across USA, France, Germany, UK, Italy and India were reported within a ten-day timeframe. It is particularly interesting to note that Italy actually reported their first positive case a day after India while the UK reported it on the same day, yet the total number of cases as well as the associated fatalities are greatly muted in India. Even today, after 12 weeks since each country reported their first case, the number of fatalities in Italy are 9 times higher than India while fatalities in the UK are 6.5 times higher than India.

As of 22.04.2020, fatalities in India are 640 as compared to 45,063 in USA and 24,648 in Italy. Of over 184,000 deaths reported globally, the share of India is just 0.4%.

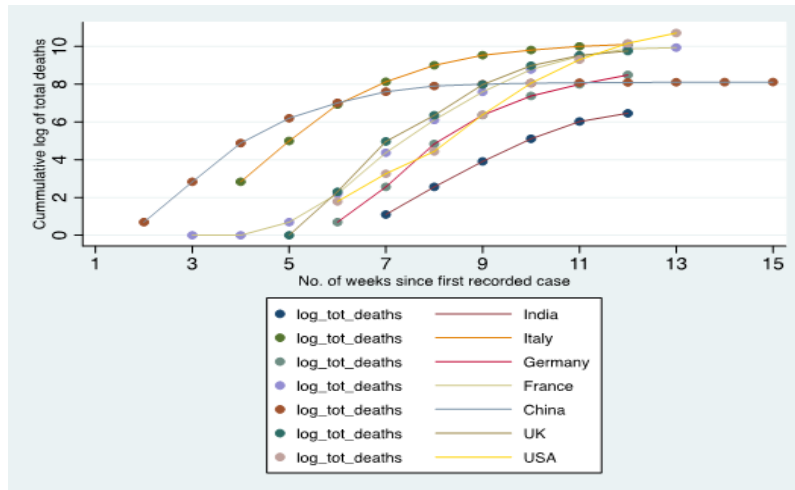


Figure 2: Cumulative total deaths in select few countries

If one were to look at the cumulative number of cases in USA, UK, China, Germany, France, India and Italy, India has remained consistently lower. The rise in cases in other countries has been steep whereas it has been linear, but modest and mild in the case of India, as is evident in figure 3 below.

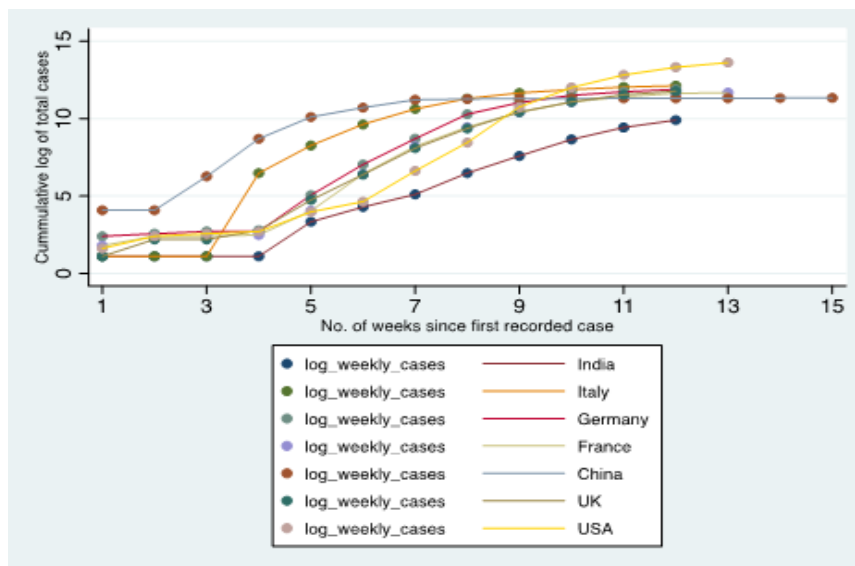


Figure 3: Cumulative total cases in select few countries

It is interesting that that while other countries picked up an upward trend as early as the second week since their first recorded case, India did not witness any major rise until the 4th week since its first reported case. Our analysis also shows that in 12 weeks since the first recorded cases

in each country, the total number of cases in USA were 39 times more than the case load of India, cases in Germany were 9 times higher than and this number was 11 for France.

A useful indicator is the five-day moving average of the total number of cases. The five-day moving average avoids any extreme variations reported in single day and will be a better indicator for the trends in the respective countries. India's five-day moving average as compared to other countries depicted graphically in figure 4 below has been the lowest. As on 22nd April 2020, India's five-day moving average of new cases stands at 1,384 while Italy reported 2,492, UK reported 4,488 and USA reported 28,065.

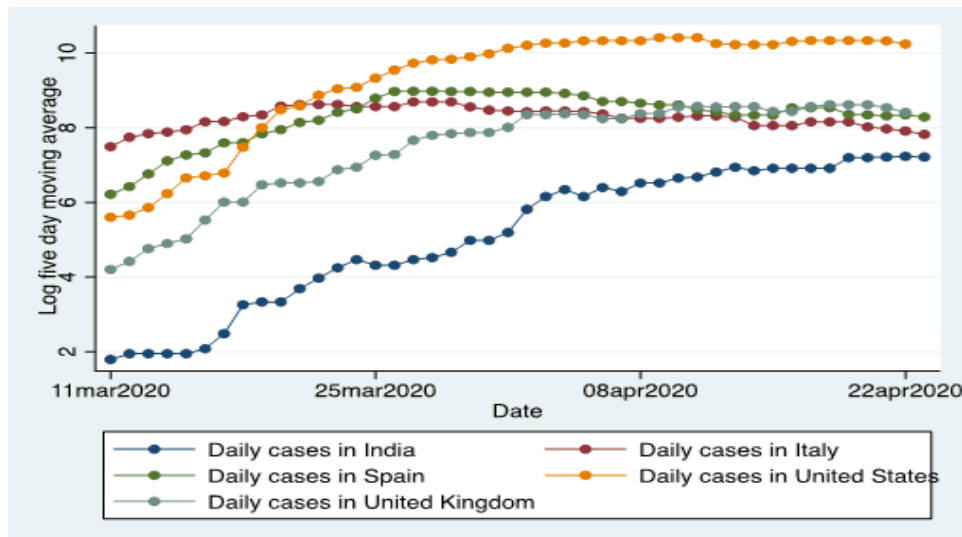


Figure 4: 5 day moving average of total number of cases

If one were to look at the 5 day moving average of fatalities, India has witnessed a consistently low trend in comparison with other countries. The first death in India was reported on 13th March, but on this day, total number of deaths in Italy were over a thousand; this despite reporting their first case a day after India. In the 10th week since the reporting of the first case. India reported 166 deaths while the number in the US reported 19 times more deaths in the same week.

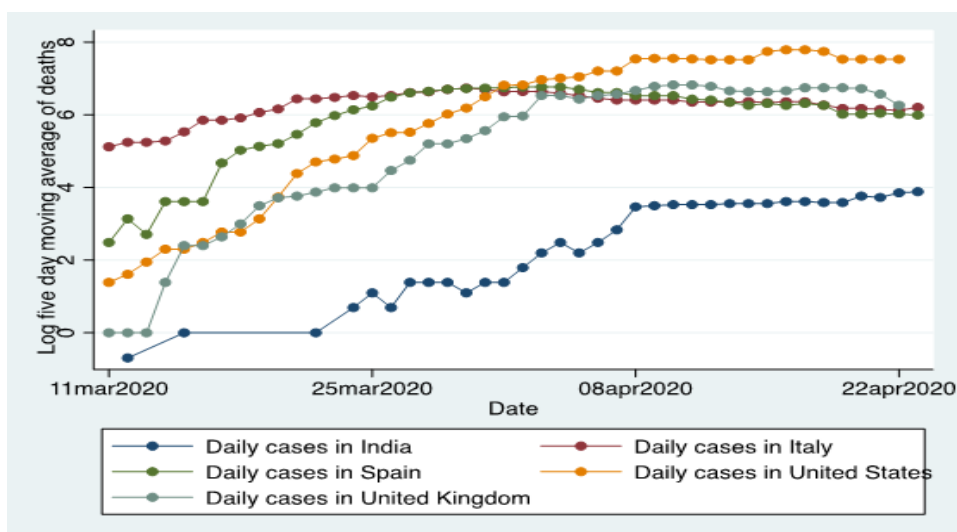


Figure 5: 5 day moving average of deaths

If we compare the progression in India with both USA as well as Italy, we notice how quickly the cases started rising in USA and Italy. Italy recorded a sudden spike in the total number of cases from day 22 onwards and on day 46 when cases in India had just started rising, the daily growth in case volumes in Italy was 1300 times that of India. Interestingly, on day 40, USA and India reported the same number of daily cases but within 15 days, the number of daily cases were 25 times the daily case load being reported in India. As of today, 22.04.2020, cases in USA are 30 times those in the India.

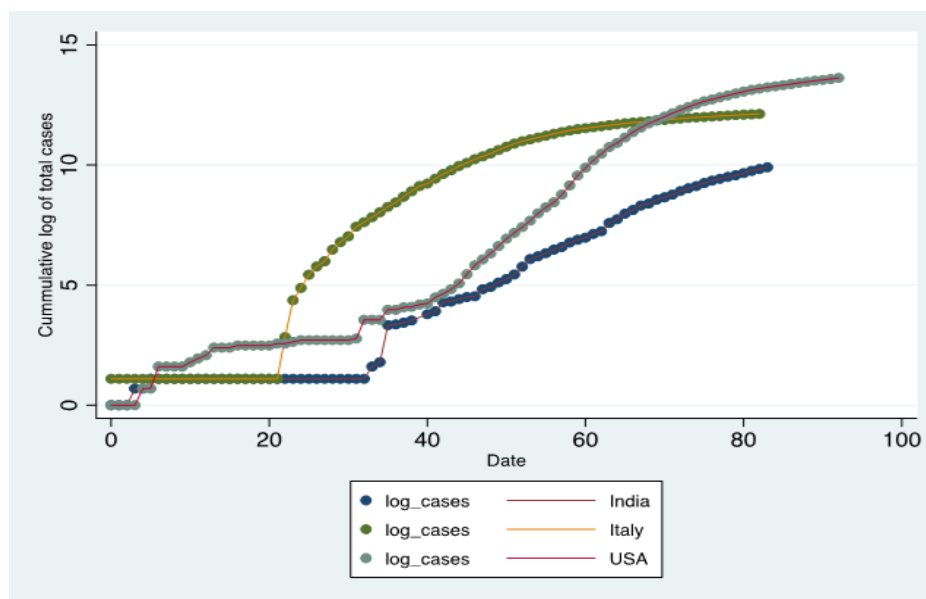


Figure 5: Cumulative case growth in India vis-à-vis Italy and USA

The contrast between India and Italy is stark, as can be seen in the figure 6. In the 4<sup>th</sup> week since India and Italy reported their first case, the weekly growth rate in Italy peaked, registering a monumental growth of 216% while growth in India remained almost negligible. India did register a peak in week 5 where the growth of cases stood at about 8.3%.

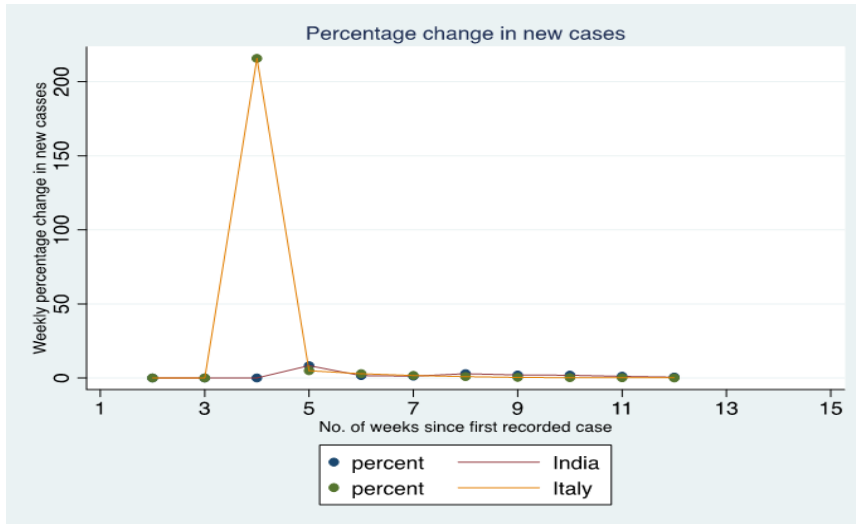


Figure 6: Weekly growth in India vis-à-vis Italy

A debate raging throughout the progression of the virus in India has been on the issue of testing. We believe that although the overall testing volume in comparison with other countries has been low, it is not reason enough to conclude that low testing volumes have led to a lower detection rate. India has been carrying out targeted and focussed testing and out of all those tested, the total positive case detection rate has been about 4.35%, which is extremely low as compared to a whopping 34.48% in France.

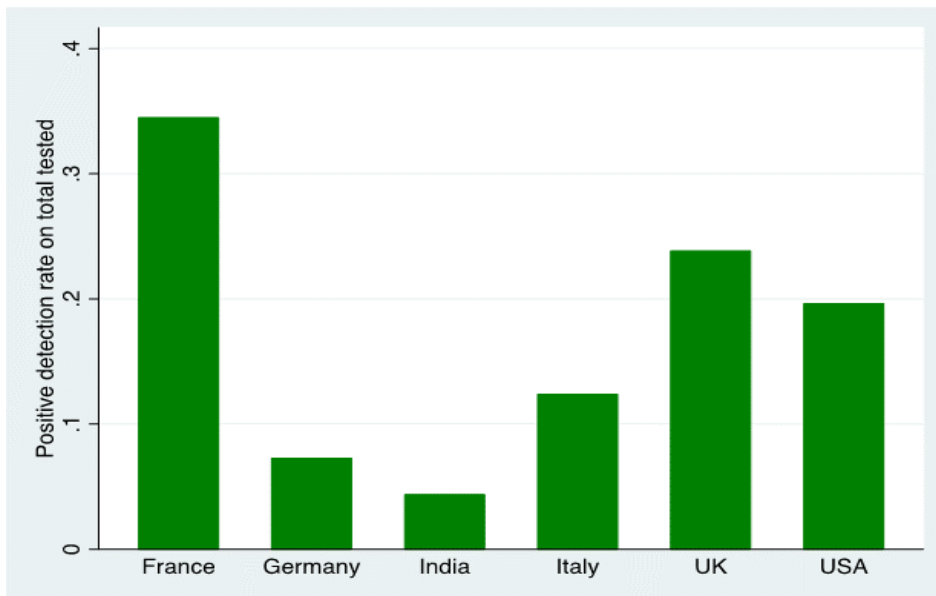


Figure 7: Positive detection during testing

The counter-argument to the low testing volume is that India has mostly been testing symptomatic people, who are more likely to test positive for the virus and yet, only 4.35% of the total people tested have turned out to be positive. There is little logic in suggesting that increasing testing volumes would increase the total positive cases detected and a case in point is Germany which has carried out 24,738 tests per Million population, the highest, and yet the positive case detection rate remains just 7.26%.

As per recent reports by ICMR, a high percentage of those testing positive are asymptomatic, which is both a positive development and also somewhat an area of concern. It should be considered to be a positive development since these individuals are healthy and do not require medical attention thereby preventing an excess stress on the medical infrastructure. What is concerning, however, is that post the lockdown, the interaction of such people with individuals or groups who are more vulnerable could make matters worse. This would require vulnerable individuals and co-morbids to take strong precautions and stay at home to the extent possible.

India has also been ramping up testing rapidly and as can be seen in the figure 8 below, in the last 5 days, an average of 33,000 tests have been considered on a daily basis while the growth in testing over the last 10 days has been 130%.

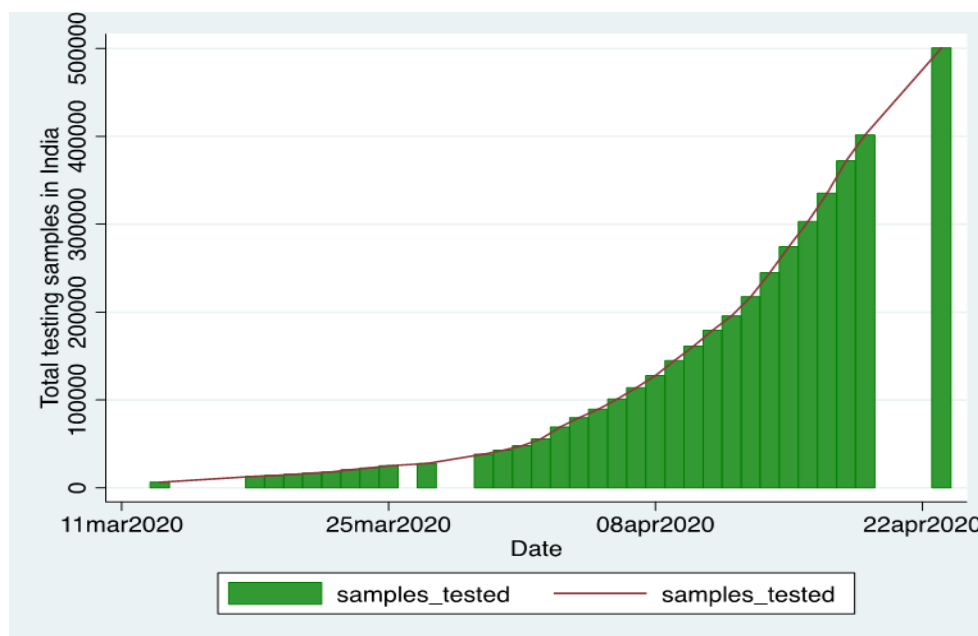


Figure 8: Growth of testing in India

It would not be inappropriate to conclude that the effect of COVID-19 has been muted in India thus far. The number as well as the rate of growth in the total positive cases as well as fatalities has been consistently lower, linear but non-exponential. It would be interesting to understand what led Italy, which reported their first case after India to end up with almost 187,327 total cases and 25,085 total deaths and a health system which was overwhelmed by such volumes.

First, India has been much more stringent and proactive in undertaking measures aimed at arresting the spread of the virus. India started curtailing incoming international traffic and some states started imposing restrictions even prior to the one-day voluntary Janata Curfew which was announced by the Prime Minister. This was followed by the bold decision to initiate and enforce a nationwide lockdown till 15<sup>th</sup> April which has now been extended till 3<sup>rd</sup> May. The stringency of our measures is apparent in the stringency score which has been awarded by Oxford University to various countries as part of an ongoing study which analyses the response

of the governments of various countries to the COVID-19 situation. India is one of the very few countries which was awarded a score of 100 early on during the situation.

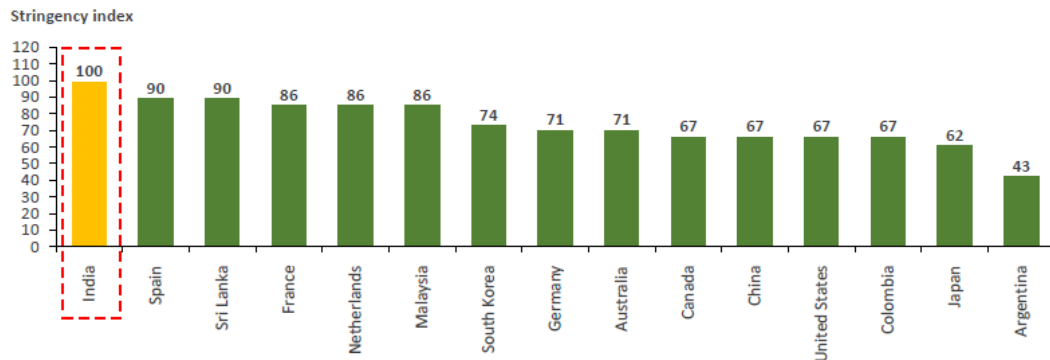


Figure 9: Stringency scores as of 1<sup>st</sup> week of April 2020

Despite the turn of events in Italy, till date, their measures have not been as stringent as those taken by India. USA, UK, Germany and Iran were extremely slow to respond to the situation through means of stringent measures and their stringency score also remains well below India. The data on 13 indicators such as travel bans, school closures, public transport closures, restrictions on the outside and within the country movement, testing policies and contact tracing is aggregated to calculate stringency index.

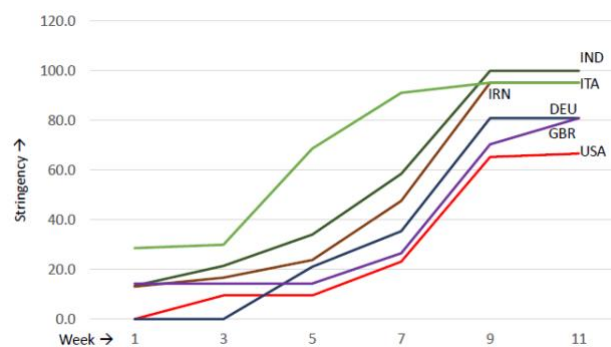


Figure 10: Weekly stringency scores of select countries

The contrast between the measures taken by India and the US are also evident in the figure below. India was quick to undertake strong measures even though our cases and deaths remain far below those of the US. Despite the high number of cases and death toll, measures taken by US are still not at par with those taken by India.

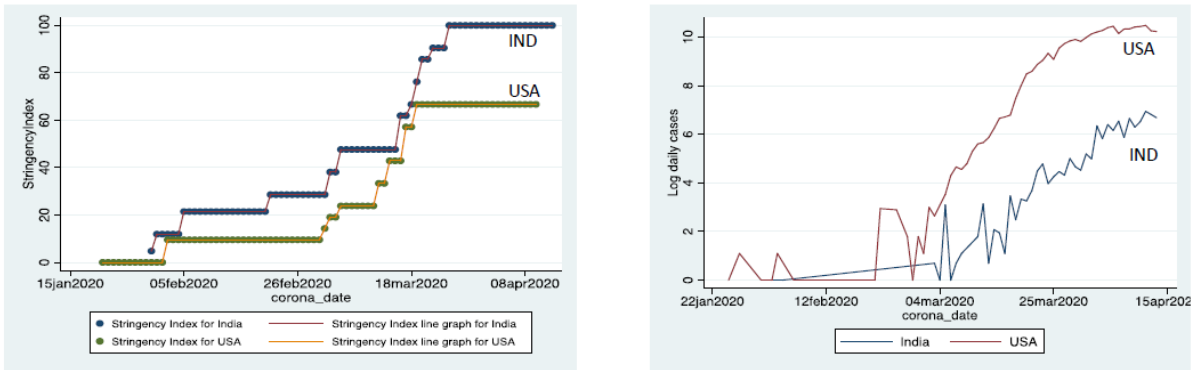


Figure 11: Stringency and case growth in India and USA

As a result of the strict and decisive measures taken by India, the rate of growth in cases shows a relatively stable trend, as evident in the figure 12 below. However, it would be too early to adjudge it as a flattening of the curve.

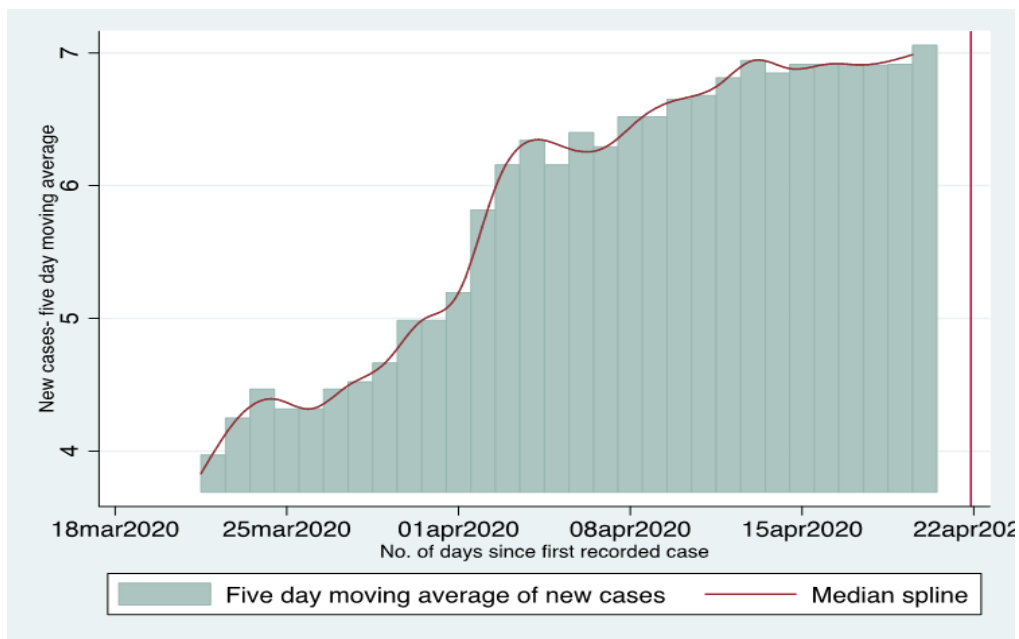


Figure 12: Trends in five day moving average of new cases

The impact of the lockdown has been evident in the form of an improvement in the doubling rate from 3.5 to 7.5 days, as of 22<sup>nd</sup> April.



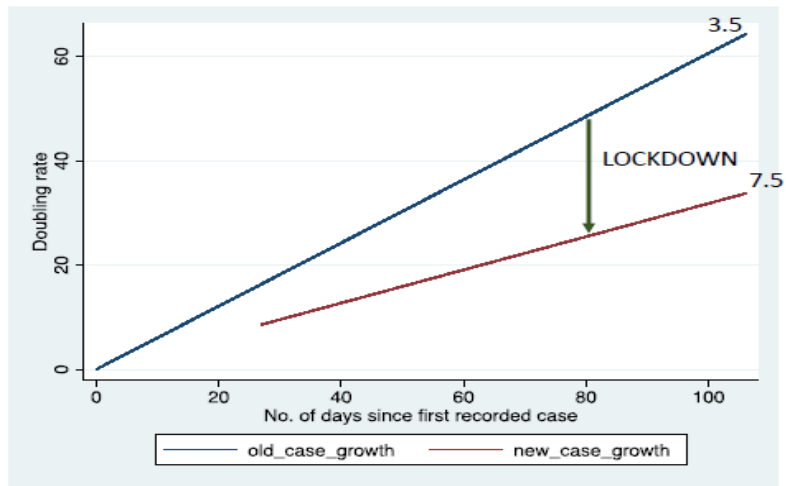


Figure 13: Trends in five day moving average of new cases

Second, India is one of the youngest countries in the world. Our median age is just 27.9 years, as compared to 47.1 years in Germany and 45.5 years in Italy.

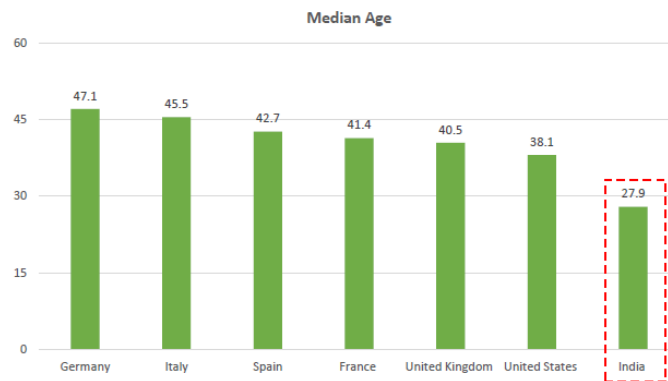
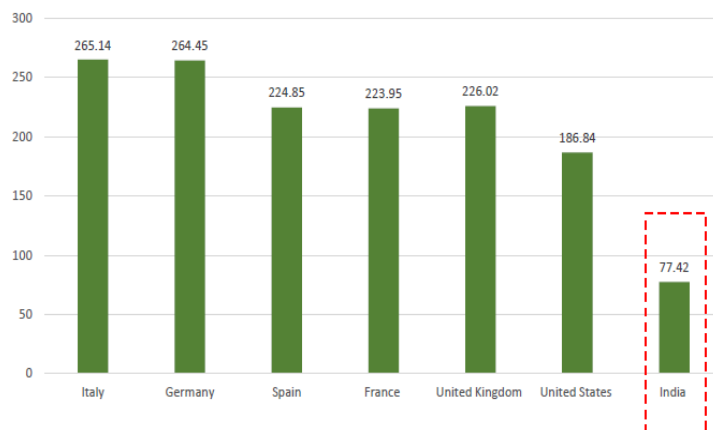


Figure 14: Median age of India and select countries

This may be of particular importance especially since those above the age of 60 are considered to be a high-risk group. In terms of the number of people over 60 per thousand population, this number stands at 77.42 in India as compared to 265 in Italy and 264 in Germany.



*Figure 15: Population over 60 in India and select countries*

Third, the Integrated Disease Surveillance Program or IDSP which was launched in 2004 to detect and respond to epidemic outbreaks facilitated quick identification and isolation of corona infected patients in 2020. Hence, to an extent, the corona outbreak in India is contained with the availability of IDSP data, which is generated every week. Institutionalized system in the form of IDSP helped mitigate the impact in India.

These positive results, however, should not let us lower our guard down. We must increase pooled sample testing and also start undertaking anti-body testing. The lockdown must be rolled back in a phased and staggered manner while ensuring that high risk groups are encouraged to stay home. Strict social distancing norms, use of face masks and hyper-localization to contain hotspots and areas of high risk should be the way forward.

*(The excerpt of this report is published in Hindu Business Line on April 27,2020)*