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The Trend of COVID-19 Outbreak in India

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Abstract: ***The objective of this present study is to emphasize the scenario existing because of COVID-19 in India. The study also emphasizes the strategic actions taken by India to regulate the spread of infection. This study provides an insight into the prevailing stage of the disease within the country through graphical trend analysis. The data for the present study has been considered from the repository of John Hopkins University from 30th January 2020, when the primary case registered to 30th April 2020 covering Phase one and Phase two complete lockdown of India with straight by-laws. The trend of recent cases remains following the exponential order, which is one of the most effective epidemiological models for predicting the initial stages and rate of infectious disease with no seasonality interventions. the important outcomes of the study imply that the number of totals confirmed cases increasing in an exponential pattern within the last 11 days, the case death rate stands at 3.25, 0.56 testing per thousand people.***

Keywords: COVID-19, India, nCov, Trend of cases, deaths.

I. INTRODUCTION

Coronaviruses are a wide family of viruses which can cause animal or human illness. Several coronaviruses are known to cause respiratory infections in humans ranging from common cold to more serious diseases such as Middle East Respiratory Syndrome (MERS) and Extreme Acute Respiratory Syndrome (SARS). The foremost recent coronavirus discovered triggers the COVID-19 coronavirus disease. [1]

COVID-19 is a communicable disease caused by the foremost recently discovered coronavirus. The latest virus and disease was unknown in December 2019, until the outbreak started in Wuhan, China. Studies so far show that the virus causing COVID-19 is transmitted mainly by contact with respiratory droplets, rather than through the air. The prospect of receiving COVID-19 from an infected person's feces is seemingly small. Although initial reports indicate that in some cases, the virus could even be found in feces, spreading via that route isn't a heavy feature of the outbreak. [2]

India is the leading region in the South Asian region which is the second-most populous country in the world after China. Uncontrolled pandemic in India can lead to the impact of almost 1/6th population of the world. India holds a significant value on the world map concerning trade, economy, defence, culture, entertainment, outsourcing workforce, manufacturing, and services.

Indians are present in almost all regions of the world and are working towards strengthening the work processes and economies of the world. The trends and forecasts for the Indian region must be studied well so that effective strategies can be drawn for the region. Since the mechanisms of COVID-19 dissemination are not well known, the number of people infected is high and the results of containment are measured largely on an empirical basis. Therefore it might be important to provide a more detailed study of disease transmission. [2]

II. METHODOLOGY

The present study is to emphasize the trend of the disease in India with basic models of trend analysis, in which the number of infected cases and death case has been considered. Similarly, new confirmed cases and death cases were plotted to check the rate at which they are projecting. The rate of the total number of Covid-19 testing carried concerning the new cases registered, the rate of case fatality is also plotted from the data collected from the John Hopkins University website. The data has been considered for the Indian region from 30th Jan 2020, when he first COVID outbreak recorded in India, up to 30th April 2020, during which India is under Phase two of complete lockdown.

III.TREND OF COVID-19

A. The Trend of the Number of Cumulative Infected Persons and Death in India till 30th April 2020.

The total cases in Indis is showing a steep rise daily in Fig. 1. As seen from the figure and trend depicted by the dataset for COID-19 outbreaks. The cumulative number of the infected people as on 30.04.2020 is 33050 and there were 1074 deaths reported. The number of infected people is increase rate is at 2.1 in the last 11days, i.e. from 19th Apr 2020 to 30th Apr 2020. As phase two lockdown is about to lifted by the Indian government still there is no sign of a drop in increasing numbers of infected people. Which created a hard situation to the government to decide the conditions after phase two lockdown in India.

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B. The Trend of the Number of Cumulative New Infected Persons and New Deaths in India till 30th April 2020.

The total new cases and new deaths in Indis are shown in Fig. 2. Since the first case registerd and upto the phase one lockdown time i.e. 24th Mar 2020 the average number of new cases registered per day as 9.75. since it was the initial stage of the disease and very few were diagnosed with the virus. But the average is still increasing even in a lockdown period which was said to be the traced primary and secondary contacts of the infected people immigrated from the highly infected areas before the lockdown period.

C. The Total Testing per Thousand of the Population till 30th April 2020.

The total covid testing in Indis is showing a steep rise daily Fig. 3.

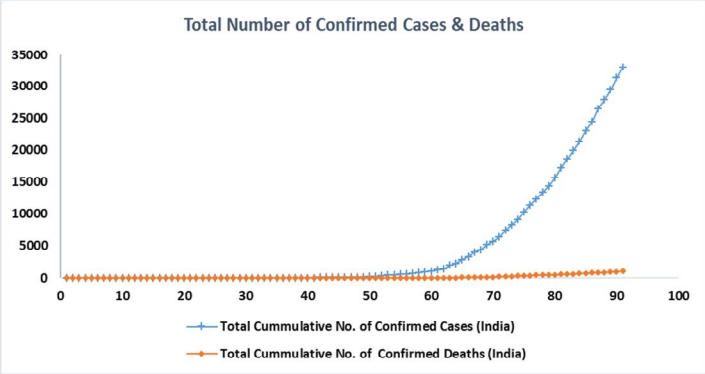


Fig. 1 Total number of confirmed cases & deaths from the day of 1st COVID outbreak in India

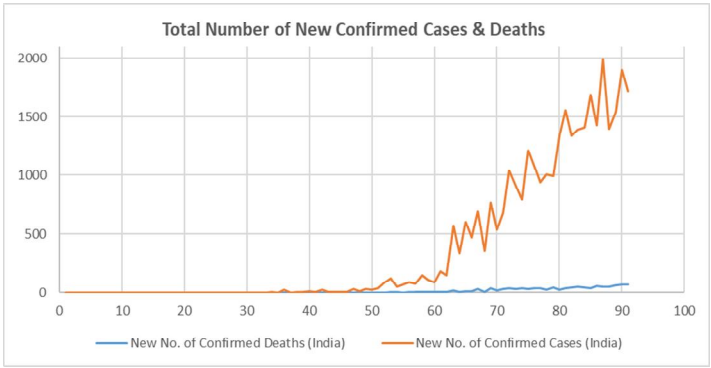


Fig. 2 Total number of new cases & deaths from the day of 1st COVID outbreak in India

According to the Indian Council of Medical Research (ICMR), "the number of tests done every day is below its potential testing capacity". India has adopted the theory of random testing to trace the infected people which do not show the complete result in tracing the infected, therefore, the number of tests should be increased with more frequency. From Fig. 3 India has a rate of 0.56 testing per thousand population. Therefore, it is evident that the other countries with less population density as compared to India are performing well in testing the more number.

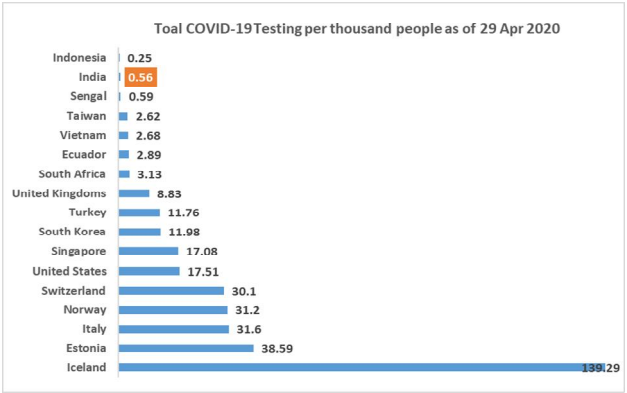


Fig. 3 Total COVID testings per thousand people as of 29th Apr 2020.

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D. LockDown, Social Distance, and Hotspots

It is clearly evident that the national lockdown had dramatically slowed the speed of transmission. As a result, the expansion rate of recent cases has slowed. India has been ready to cut "community transmission" and minimize its spread by increading the doubling rate. One challenge to India's response to COVID-19 is that misinformation spread is motivated by fear, stigma and blame. There are rising levels of violence against health-care workers and stigmatisation of individuals with or suspected of getting COVID-19, which could impede reporting of illness. The pandemic has also been accustomed fan anti-Muslim sentiment and violence, after a gathering connected to the group Tablighi Jamaat was identified as being liable for many cases. A welcome effort to combat false news is being led by a group of over 400 multidisciplinary Indian scientists who voluntarily developed the Answer of Indian Scientists to COVID-19 to counter myths and misinformation about the disease.

In India's favor, its young population (65 percent aged < 35 years) is a less significant pandemic than was expected to date. The lockout already has the desired effect of epidemic curve flattening. Under these conditions, keeping social distance can be difficult, and this may make the lockdown less successful in India than in other countries where it is easier for more people to keep distance.

IV. CONCLUSION

Based on the present trend of the positive cases, deaths, testing pattern, awareness levels publicly, availability if hospitals and beds, the subsequent recommendations are drawn:

A. Extension of Lockdown for atleast a week instead of 3rd May.
B. Develop indigenous rapid testing kits rather depending on other country's support.
C. Implement stringent by-laws in the areas where cases are high in numbers
D. Not to allow any sort of cross bordering at International, Inter-nation, and also district levels.
E. Increase the awareness in the public, encourage N.G.O's to give their hands in mobilizing the funds to relief work in hard-hit areas.
F. Continuous health monitoring teams should be deployed to the high, medium, low and no-risk zones for monitoring the health conditions of the public.

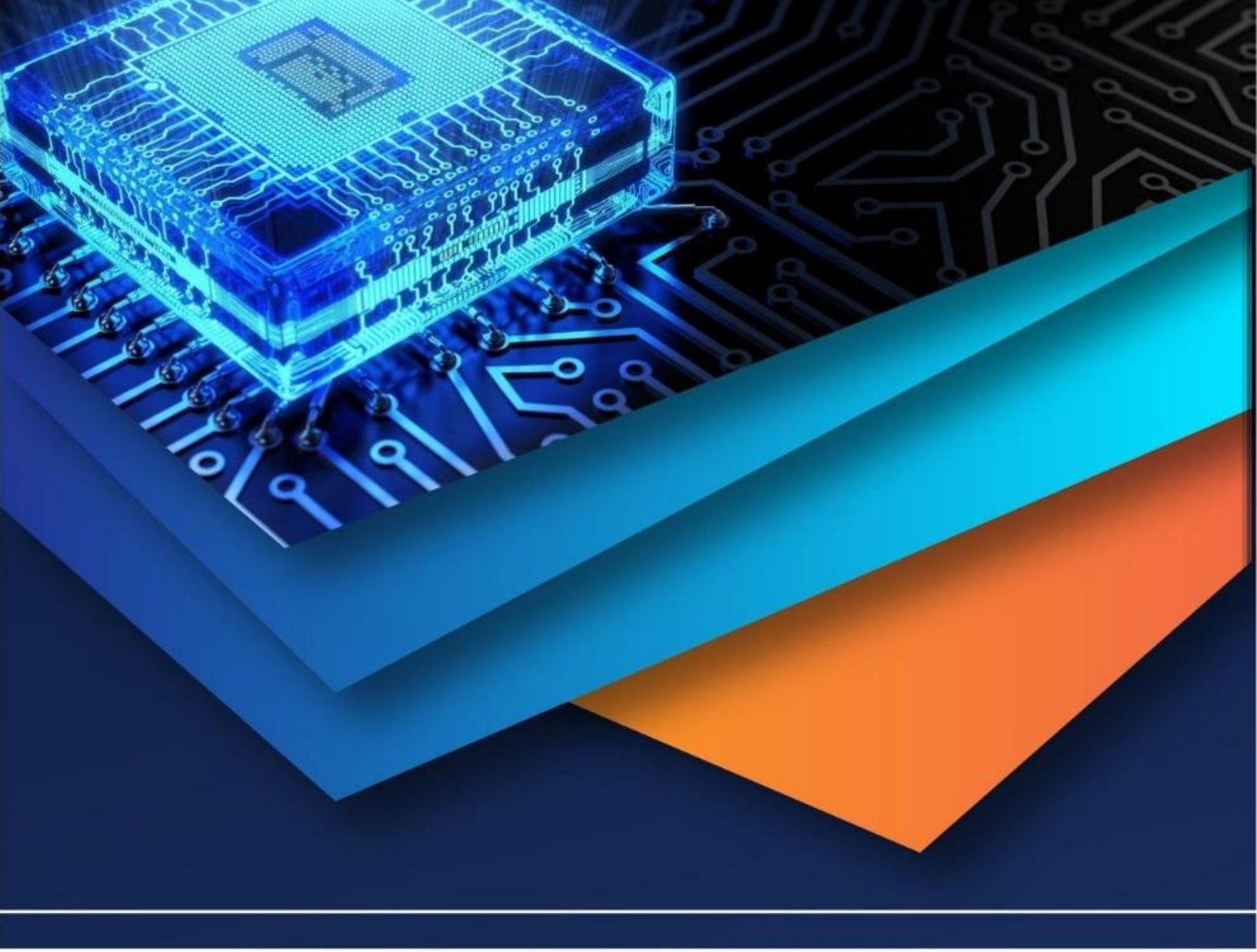
V. ACKNOWLEDGMENT

The author would like to thank John Hopkins University for releasing the updated COID-19 datasets publicly

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