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ABSTRACT

COVID-19, an infectious disease caused by the most recently discovered coronavirus, has affected almost all countries globally. As of 13th September, 2020, there have been ~2.85 crores of confirmed cases and ~9.16 lakhs of deaths worldwide and in India, it has been ~47.54 lakhs of confirmed cases and 78,586 deaths due to this pandemic.

Unlike many other countries, India is diverse and hence the spread of the disease across the country is not uniform. This results in a need for a state-wise analysis considering the population density and the area of each state.

On the other hand, the Government of India has imposed various levels of lockdown starting from Lockdown 1.0 in March to Unlock 4.0 in September to ensure social distancing among people. This significantly impacted the movement of goods and people across the country differently every month.

In this paper, we study the pattern on the number of infected people and the death rate state-wise. For data analysis, population density and area of each state in India is considered. Also, analysing the data without considering the impact of lockdown is futile as the movement of people and goods have been different all through the various phases of lockdown. Hence we consider the above factors in the study which provides insight from a different perspective.

In addition to the pattern analysis, we also arrive at a formula for prediction of the spread of this disease. Since generating only one model may not be sufficient, we generate logistic and exponential methods and the reference data is taken from the Ministry of Health and Family Welfare and Covid19India.