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PREDICTION OF NUMBER OF CASES AND DEATHS DUE TO THE SECOND WAVE OF COVID-19 USING ARIMA MODEL FOR MAY 11-JUNE 30, 2021: A STUDY ON INDIA AND ITS MAJOR STATES

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ABSTRACT

Background: The devastating spread of the novel coronavirus, named COVID-19, starting its journey from Wuhan Province of China on January 21st, 2020, has now further threatened lives of almost all the countries of the world in different magnitudes with its second, and somewhere third waves. Mostly the developed countries have been hit hard, besides the emerging countries like China, India and Brazil. The Indian major states are now highly affected by its second wave starting from Maharashtra and Kerala in early February 2021. The government of India as well as the state governments are struggling to arrest the situation. **Objectives:** The study aims to predict the number of cases in India and its severely impacted states like Maharashtra, Kerala, Karnataka, Tamil Nadu, Gujarat, Andhra Pradesh, Uttar Pradesh, West Bengal, Rajasthan and Delhi for the period May 11-June 30, 2021 and compares the predicted values with the actual values to judge its depth of severity and growth. **Method:** The study uses Box-Jenkins method of forecasting in an Autoregressive Integrated Moving Average (ARIMA) structure on the basis of the daily data published by the Government of India from February 1st to May 10th, 2021. **Results:** It is derived that India and its ten highly affected states will be facing the gloomy scenario in the number of cases and deaths in the coming 51 days. Tamil Nadu is an exception with regard to the number of deaths as its predicted deaths will be declining. India will reach around 3.87 crore of number of cases and 4.9 lacs of death on June 30. Maharashtra will be the leader in the



group keeping all the remaining states well behind in both the number of cases and deaths. Mass scale vaccination is recommended to save the people of country from the ill effects of the virus.

KEYWORDS: *COVID-19; prediction; ARIMA, Box-Jenkins; mean difference.*

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