عنوان مقاله:

COVID-19 Inpatients in Sothern Iran: A Time Series Forecasting for 2020-2021

نویسندگان:

Maryam Soleimani Movahed - *Education Development Center (EDC), Iran University of Medical Sciences, Tehran, Iran*

Farid Khorrami - *Health Information Technology, Faculty of Paramedicine, Hormozgan University of Medical Sciences, Bandar Abbas, Iran*

Abbas Sheikhtaheri - *Department of Health Information Management, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran*

Mehdi Hasaniazad - *Infectious and Tropical Diseases Research Center, Hormozgan Health Institute, Hormozgan University of Medical Sciences, Bandar Abbas, Iran*

Abdollah Gharibzadeh - *Cardiovascular Research Center, Hormozgan University of Medical Sciences, Bandar Abbas, Iran*

Mina Kamali - *Health Information Technology, Faculty of Paramedicine, Hormozgan University of Medical Sciences, Bandar Abbas, Iran*

خلاصه مقاله:

Background: The rapid spread of coronavirus disease 2019 (COVID-19) turned into a global pandemic and has already plunged health systems all over the world into an unprecedented crisis. The start of the third wave in the fall of 2020 is likely to trigger a higher prevalence in the upcoming months. This article analyzed the inpatients' time series data in Hormozgan province to forecast the trend of COVID-19 inpatients using time series modelling.Methods: To forecast COVID-19 inpatients in Hormozgan province (Iran), this time series study included data related to the daily new cases of 1) confirmed inpatients, 2) suspected inpatients, 3) deaths, 4) alive discharged patients, 5) admitted cases to intensive care units (ICUs), 6) ICU discharged cases, and 7) ICU inpatient service day were collected from 22 hospitals in the province from 20 February to 13 November 2020. Autoregressive integrated moving average (ARIMAX) and Prophet methods were applied for forecasting the trend of inpatient indicators to the end of the Iranian official calendar year. We used the Python programming language for data analysis.Results: Based on the findings of this study which proved the outperformance of Prophet to ARIMAX, it can be concluded that time series of suspected inpatients, confirmed inpatients, recovered cases, deaths, and ICU-inpatient service day followed a downward trend while ICU-admission and discharge time series are likely taking an upward trend in Hormozgan to the end of the current Iranian calendar year.Conclusion: Prophet outperformed ARIMAX for inpatient forecasting. By forecasting and taking appropriate prevention, diagnostic and treatment, educational, and supportive measures, healthcare policy makers could be able to control COVID-19 inpatient indicators.

لینک ثابت مقاله در پایگاه سیویلیکا: