Model Prediksi Hubungan Polusi Udara Terhadap Kasus Covid-19 Di Kota Tangerang Tahun 2020-2022 = Prediction Model of the Association between Air Pollution and Covid-19 Cases in Tangerang City in 2020-2022

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Abstrak

Polusi udara dapat meningkatkan kerentanan terhadap COVID-19. Pengendalian polusi udara serta pengendalian COVID-19 di Kota Tangerang belum dilaksanakan dengan maksimal. Tujuan dari penelitian ini adalah menentukan model prediksi hubungan polusi udara terhadap kasus COVID-19 Kota Tangerang Tahun 2020-2022. Penelitian ini menggunakan desain studi ekologi tren waktu serta kualitatif. Penelitian ini dilaksanakan di Kota Tangerang pada bulan April- Juni 2023. Penelitian ini menggunakan data sekunder meliputi data ISPU (NO2, SO2, PM10, dan PM2,5), suhu, kelembapan udara dan kasus COVID-19 di Kota Tangerang. Analisis data menggunakan analisis univariat, uji korelasi, uji regresi linier berganda. Gambaran NO2, SO2, PM10 tahun 2020-2022 berada dalam kategori baik, sedangkan PM2,5 adalah kategori sedang. Hasil uji korelasi spearman menunjukkan SO2 (p= 0,001 ; r= -0,109) dan PM10 (p= 0,000 ; r= -0,210) berhubungan signifikan terhadap kasus konfirmasi COVID-19. Analisis multivariat menunjukkan polusi udara yang paling dominan mempengaruhi kasus COVID-19 di Kota Tangerang adalah PM10, setelah dikontrol dengan PM2,5, suhu dan kelembapan. Variabel PM10, PM2,5, suhu, dan kelembapan dapat menjelaskan variasi variabel kasus COVID-19 sebesar 17,7%. Model prediksi hubungan polusi udara dengan kasus COVID-19 di Kota Tangerang Tahun 2020-2022 adalah kasus konfirmasi COVID-19 = 4384,38 + 22,47PM10 + 1,63PM2,5 - 120,39suhu - 13,33kelembapan.

.....Air pollution can increase vulnerability to COVID-19. Air pollution control and COVID-19 control in Tangerang City have not been implemented optimally. The purpose of this study is to determine the prediction model of the relationship between air pollution and COVID-19 cases in Tangerang City in 2020-2022. This research uses a time trend ecological study design and qualitative. This research was conducted in Tangerang City in April-June 2023. This study used secondary data including ISPU data (NO2, SO2, PM10, and PM2,5), temperature, humidity and COVID-19 cases in Tangerang City. Data analysis used univariate analysis, correlation test, multiple linear regression test. The overview of NO2, SO2, PM10 in 2020-2022 is in the good category, while PM2,5 is in the moderate category. The results of the spearman correlation test showed that SO2 (p = 0.001; r = -0.109) and PM10 (p = 0.000; r = -0.210) were significantly associated with confirmed cases of COVID-19. Multivariate analysis shows that the most dominant air pollution affecting COVID-19 cases in Tangerang City is PM10, after controlling for PM2,5, temperature and humidity. PM10, PM2,5, temperature, and humidity variables can explain 17,7% of the variation in COVID-19 case variables. The prediction model of the relationship between air pollution and COVID-19 cases in Tangerang City in 2020-2022 is confirmed COVID-19 cases = 4384,38 + 22,47PM10 + 1.63PM2,5 - 120.39 temperature - 13.33 humidity.