

**PEMODELAN SPASIAL KASUS PNEUMONIA BALITA BERDASARKAN
PENCEMAR UDARA ATMOSFER GLOBAL DI SUMATERA BARAT
TAHUN 2020-2023**

TESIS

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xi + 95 halaman, 19 tabel, 16 gambar, 5 lampiran

ABSTRAK

Tujuan Penelitian

Pneumonia balita merupakan penyebab utama morbiditas balita di Indonesia. Provinsi Sumatera Barat menunjukkan angka kejadian yang signifikan dari tahun ke tahun. Penelitian ini bertujuan untuk mengetahui hubungan pencemar udara dengan kejadian pneumonia balita dan karakteristik wilayah berdasarkan jumlah kasus pneumonia di Provinsi Sumatera Barat tahun 2020-2023.

Metode

Penelitian ini menggunakan desain studi ekologi. Data diperoleh dari pengukuran kualitas udara GAW Kototabang dan data kejadian pneumonia balita dari Dinas Kesehatan Provinsi Sumatera Barat. Analisis dilakukan secara univariat, bivariat menggunakan korelasi, analisis autokorelasi dan LISA univariat kasus pneumonia, serta multivariat menggunakan analisis regresi linier berganda.

Hasil

Kota Padang menanggung beban tertinggi (6101 kasus), sedangkan Kepulauan Mentawai terendah (53 kasus). Analisis korelasi menunjukkan adanya hubungan PM10 dengan pneumonia ($p = 0,047$; $r = -0,289$). CO merupakan faktor paling dominan berhubungan dengan kejadian pneumonia. Moran's I menunjukkan autokorelasi global lemah, namun LISA mengidentifikasi Kota Padang dan Pesisir Selatan termasuk hotspot yaitu wilayah dengan kasus pneumonia tinggi, Pasaman Barat termasuk wilayah dengan kasus pneumonia rendah (coldspot) dan Low-High (outlier) di Kota Solok, Kabupaten Solok, Solok Selatan, dan Padang Pariaman.

Kesimpulan

Distribusi pneumonia balita di Sumatera Barat dipengaruhi pencemar udara dan faktor spasial lokal. Wilayah dengan kasus pneumonia tinggi membutuhkan intervensi prioritas, sedangkan wilayah dengan kasus pneumonia rendah memerlukan upaya preventif untuk mencegah peningkatan kasus akibat pengaruh daerah tetangga.

Daftar Pustaka : 50 (2006-2024)

Kata Kunci : Pneumonia; balita; pencemaran udara; spasial; LISA.

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**SPATIAL MODELING OF UNDER-FIVE PNEUMONIA CASES BASED ON
GLOBAL ATMOSPHERIC AIR POLLUTANTS IN WEST SUMATERA,
2020-2023**

xi + 95 pages, 19 tables, 16 pictures, 5 attachments

ABSTRACT

Objective

Under-five pneumonia remains one of the leading causes of child morbidity in Indonesia. West Sumatra Province has shown a significant number of cases over the years. This study aims to examine the relationship between air pollutants and under-five pneumonia, as well as to identify regional characteristics based on the number of pneumonia cases in West Sumatra Province during 2020-2023.

Methods

This research used an ecological study design. Air quality data were obtained from Global Atmosphere Watch Kototabang Station, pneumonia data from the West Sumatra Provincial Health Office. Analyses included univariate, bivariate correlation, global spatial autocorrelation univariate LISA, and multivariate multiple linear regression.

Results

Padang City bears the highest burden (6,101 cases), while the Mentawai Islands have the lowest (53 cases). The correlation analysis revealed a significant relationship between PM10 and pneumonia ($p = 0.047$; $r = -0.289$). CO was identified as the most dominant factor. Moran's I indicated weak global autocorrelation, LISA analysis identified Padang and Pesisir Selatan as hotspots while West Pasaman was classified as a cold spot with low incidence. Low-High patterns were observed in Solok, Solok Regency, South Solok, and Padang Pariaman.

Conclusion

The distribution of pneumonia among children under five in West Sumatra is influenced by air pollutants and local spatial factors. Areas with high pneumonia incidence require prioritized intervention, while regions with low incidence need preventive measures to avoid an increase in cases due to the influence of neighboring areas.

Rederences : 50 (2006-2024)

Keywords : Pneumonia; under-five; air pollution; spatial analysis; LISA