

INTISARI

Latar Belakang: Persoalan kesehatan akibat demam dengue tetap menjadi tantangan serius di Indonesia, tidak terkecuali bagi kawasan pengembangan wilayah Ibu Kota Nusantara (IKN) yang tengah berkembang, di mana urbanisasi dan pembangunan infrastruktur dapat meningkatkan risiko penularan. Kompleksitas perubahan lingkungan, mobilitas penduduk, dan munculnya habitat perkembangbiakan *Aedes* yang baru semakin menjadikan wilayah ini rentan terhadap peningkatan kasus demam dengue.

Tujuan: Penelitian ini bertujuan menganalisis indeks larva dan karakteristik tempat perkembangbiakan *Aedes*, mengukur pengaruh unsur iklim dan demografi terhadap kejadian demam dengue, mengidentifikasi pola serta kluster spasial kasus, serta menilai peran *knowledge, attitude, and practice* (KAP) masyarakat terhadap pencegahan dengue di wilayah IKN.

Metode: Riset ini menerapkan desain *cross-sectional*. Data dikumpulkan melalui observasi data entomologi survei jentik serta pencatatan unsur iklim dan demografi dari data sekunder. Analisis hubungan menggunakan korelasi *Spearman*, sedangkan pola dan kluster spasial dievaluasi menggunakan metode *Standard Deviational Ellipse, Kernel Density Estimation*, dan *Moran's I*. Penilaian KAP masyarakat dilakukan menggunakan kuesioner terstruktur.

Hasil Penelitian: Survei entomologi menunjukkan indeks larva *aedes* kategori sedang, dengan ABJ 75,7%. Kontainer dominan berupa bak mandi, ember, dan drum. Korelasi spearman menunjukkan hubungan signifikan pada kelembapan (*lag* 1: $r = -0,747$; $p = 0,003$), kecepatan angin (*lag* 0: $r = 0,691$; $p = 0,006$), dan lama penyinaran matahari (*lag* 0: $r = 0,593$; $p = 0,025$). Analisis spasial menunjukkan bahwa *hotspot* kasus dan kontainer positif dari *Kernel Density Estimation* terlokalisasi pada wilayah dengan kepadatan penduduk tinggi. *Standard Deviational Ellipse* menunjukkan bahwa pusat dan orientasi sebaran kasus berdekatan dengan distribusi kepadatan penduduk maupun lokasi kontainer positif. *Moran's I* menunjukkan otokorelasi spasial positif yang kuat pada kepadatan penduduk ($I = 0,327$). Hasil uji *Chi-Square* menunjukkan tidak ada hubungan signifikan antara aspek KAP dengan kejadian demam dengue ($p > 0,05$).

Kesimpulan: Kejadian demam dengue di wilayah pengembangan IKN berkaitan dengan variasi unsur iklim tertentu, kepadatan vektor, serta karakteristik demografi. Kasus demam dengue cenderung muncul pada area dengan kepadatan penduduk tinggi yang juga memiliki kontainer positif, sebagaimana terlihat dari konsentrasi *hotspot* dan orientasi sebaran kasus. Faktor kelembapan, kecepatan angin, dan lama penyinaran matahari menunjukkan hubungan signifikan terhadap jumlah kasus, sementara pola spasial menunjukkan adanya keterkaitan antara distribusi permukiman padat dengan peningkatan risiko kejadian demam dengue.

Kata Kunci: Demam dengue, *Aedes*, kepadatan vektor, unsur iklim, kepadatan penduduk, analisis spasial, *Kernel Density Estimation, Standard Deviational Ellipse, Moran's I*, Ibukota Nusantara.

ABSTRACT

Background: Health issues resulting from dengue fever remain a significant challenge in Indonesia, including within the developing region of the Ibu Kota Nusantara (IKN), where rapid urbanization and infrastructure expansion may elevate transmission risks. Environmental changes, population mobility, and the emergence of new *Aedes* breeding habitats further increase the region's vulnerability.

Objective: This study aims to analyze *Aedes* larva indices and characteristics of *Aedes* breeding sites, measure the influence of climatic and demographic factors on dengue incidence, identify spatial patterns and clusters of cases, and assess community Knowledge, Attitude, and Practice (KAP) toward dengue prevention in the IKN area.

Methods: This research employs a cross-sectional design. Data were gathered through entomological observations via larval surveys, alongside the recording of climatic and demographic variables obtained from secondary sources. Spearman's correlation was used to assess relationships, while spatial patterns and clusters were examined using Standard Deviational Ellipse, Kernel Density Estimation, and Moran's I. Community KAP was assessed using a structured questionnaire.

Results: Larva indices were categorized as medium, with a Container-Free Index (ABJ) of 75.7%. Dominant breeding containers included bathtubs, buckets, and drums. Significant correlations were observed for humidity (lag 1: $r = -0.747$; $p = 0.003$), wind speed (lag 0: $r = 0.691$; $p = 0.006$), and duration of sunlight exposure (lag 0: $r = 0.593$; $p = 0.025$). Kernel Density Estimation revealed that case hotspots and positive containers were concentrated in high-density residential areas. The Standard Deviational Ellipse indicated that the center and orientation of case distribution aligned closely with population density patterns and locations of positive containers. Moran's I showed strong positive spatial autocorrelation for population density ($I = 0.327$). Chi-square tests revealed no significant association between KAP and dengue occurrence ($p > 0.05$).

Conclusion: Dengue incidence in the developing IKN area is associated with specific climatic variations, vector density, and demographic characteristics. Cases tend to cluster in densely populated areas with positive containers, as reflected by spatial hotspot concentrations and distribution orientation. Climatic factors, particularly humidity, wind speed, and sunlight duration demonstrated significant associations with dengue incidence, while spatial analysis demonstrated the connection between dense settlement patterns and elevated transmission risk.

Keywords: Dengue fever, *Aedes*, vector density, climatic factors, population density, spatial analysis, Kernel Density Estimation, Standard Deviational Ellipse, Moran's I, Nusantara Capital City.