

**SPATIAL ANALYSIS OF POPULATION DENSITY FACTORS, ACCESS
TO CLEAN WATER AND SANITATION FACILITIES WITH THE
INCIDENCE OF STUNTING IN THE KEDONDONG HEALTH CENTER
AREA IN 2023**

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ABSTRACT

Introduction: *Stunting is an indicator of chronic nutritional problems influenced by various factors such as population density, access to clean water, and the availability of sanitation facilities. The working area of Kedondong Public Health Center (Puskesmas) shows a high prevalence of stunting, requiring spatial analysis to identify the relationship patterns between environmental factors and stunting incidence.*

Methods: *The analysis was conducted using spatial statistical methods including Nearest Neighbor Analysis (NNA), Moran's I, and Ordinary Least Squares (OLS) regression to examine the distribution patterns and spatial autocorrelation of stunting, as well as the relationship between population density, access to clean water, and sanitation facilities with stunting incidence. Data were obtained from secondary sources from relevant agencies.*

Results: *Based on the NNA results, the distribution pattern of stunting cases in the Kedondong Public Health Center area in 2023 showed a clustered pattern. However, Moran's I analysis indicated no spatial autocorrelation between villages, and the OLS regression analysis showed no significant relationship between population density, access to clean water, and sanitation facilities with stunting incidence.*

Conclusion: *The distribution of stunting in the Kedondong Public Health Center area in 2023 formed a clustered pattern; however, there was no spatial autocorrelation and no significant relationship between population density, access to clean water, and sanitation facilities with stunting incidence.*

Keywords: *Clean Water Access, Population Density, Sanitation, Spatial Analysis, Stunting*

ANALISIS SPASIAL FAKTOR KEPADATAN PENDUDUK, AKSES AIR BERSIH DAN FASILITAS SANITASI DENGAN KEJADIAN *STUNTING* DI WILAYAH KERJA PUSKESMAS KEDONDONG TAHUN 2023

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ABSTRAK

Pendahuluan: *Stunting* merupakan indikator masalah gizi kronis yang dipengaruhi banyak faktor seperti kepadatan penduduk, akses terhadap air bersih, dan ketersediaan fasilitas sanitasi. Wilayah kerja Puskesmas Kedondong menunjukkan angka *stunting* tinggi, sehingga diperlukan analisis spasial untuk mengetahui pola hubungan antara faktor lingkungan dengan kejadian *stunting*.

Metode: Analisis dilakukan menggunakan analisis statistik spasial *Nearest Neighbor Analysis & Moran's I* dan *Regresi OLS* untuk melihat pola sebaran dan autokorelasi spasial *stunting* serta hubungan antara kepadatan penduduk, akses air bersih, dan fasilitas sanitasi terhadap kejadian *stunting*. Data diperoleh melalui data sekunder dari instansi terkait.

Hasil: Berdasarkan hasil analisis NNA, pola sebaran kasus *stunting* di wilayah kerja Puskesmas Kedondong tahun 2023 menunjukkan pola kluster (clustered) namun, analisis *Moran's I* menunjukkan bahwa tidak terjadi autokorelasi spasial antar desa dan analisis Regresi OLS menunjukkan bahwa tidak ada hubungan yang signifikan antara kepadatan penduduk, akses air bersih, dan fasilitas sanitasi terhadap kejadian *stunting*.

Kesimpulan: Sebaran *stunting* di wilayah kerja Puskesmas Kedondong tahun 2023 membentuk pola (clustered) namun tidak ada autokorelasi spasial dan tidak ada hubungan antara kepadatan penduduk, akses air bersih, dan fasilitas sanitasi terhadap kejadian *stunting*.

Kata Kunci: Analisis Spasial, Akses Air Bersih, Kepadatan Penduduk, Sanitasi, *Stunting*