

ABSTRACT

Background: The prevalence of Diabetes Mellitus (DM) continues to increase in Sumatra Island. This study aims to describe the risk factors and spatial autocorrelation patterns between sweet food consumption, physical activity, and central obesity with the incidence of Diabetes Mellitus based on the 2023 Indonesian Health Survey (SKI) data.

Methods: This study used secondary data from the 2023 SKI with a cross-sectional design. The sample consisted of 195,249 individuals selected through complex sampling across 154 districts/cities in Sumatra Island. Data analysis was conducted using SPSS. Statistical tests included Chi-Square and Logistic Regression. Spatial analysis was performed using Global Moran's I and LISA tests.

Results: The proportion of individuals aged ≥ 15 years with Diabetes Mellitus was 1.6% (95% CI: 1.5–1.7%). Three variables showed significant associations with DM: sweet food consumption [POR = 0.39 (95% CI: 0.355–0.439)], physical activity [POR = 1.34 (95% CI: 1.054–1.717)], and central obesity [POR = 2.68 (95% CI: 2.416–2.987)]. A global spatial autocorrelation of DM incidence was observed in Sumatra Island, forming a clustered pattern. Spatial autocorrelation was also found for sweet food consumption and central obesity, but not for physical activity.

Conclusion: There is a significant association between sweet food consumption, physical activity, and central obesity with the incidence of DM. The occurrence of DM in Sumatra Island demonstrates a global spatial clustering pattern. In addition, spatial autocorrelation was identified for sweet food consumption and central obesity, but not for physical activity.

Keywords: Autocorrelation, Diabetes Mellitus, Risk Factors, Global Moran's I, LISA

ABSTRAK

Latar Belakang: Angka prevalensi Diabetes Mellitus (DM) terus menunjukkan peningkatan di wilayah Pulau Sumatera. Penelitian ini bertujuan untuk menggambarkan faktor-faktor risiko serta pola autokorelasi spasial antara konsumsi makanan manis, aktivitas fisik, dan obesitas sentral terhadap kejadian Diabetes Mellitus berdasarkan data Survei Kesehatan Indonesia (SKI) tahun 2023.

Metode: Menggunakan data sekunder dari SKI 2023 dengan desain *cross-sectional*. Jumlah sampel sebesar 195.249 individu yang dipilih melalui teknik complex sampling, mencakup 154 kabupaten/kota di Pulau Sumatera. Analisis data menggunakan SPSS. Uji statistik menggunakan Chi-Square dan Regresi Logistik. Analisis spasial dilakukan dengan uji Global Moran's I dan LISA.

Hasil: Proporsi penderita Diabetes Mellitus pada penduduk usia ≥ 15 tahun sebesar 1,6% (95% CI: 1,5–1,7%). Tiga variabel menunjukkan hubungan signifikan dengan DM, yaitu konsumsi makanan manis [POR = 0,39 (95% CI: 0,355–0,439)], aktivitas fisik [POR = 1,34 (95% CI: 1,054–1,717)], dan obesitas sentral [POR = 2,68 (95% CI: 2,416–2,987)]. Ditemukan adanya autokorelasi spasial secara global terhadap kejadian DM di Pulau Sumatera dengan pola *cluster*. Sementara itu, variabel konsumsi makanan manis dan obesitas sentral menunjukkan autokorelasi spasial, namun tidak ditemukan autokorelasi spasial pada variabel aktivitas fisik.

Kesimpulan: Terdapat hubungan signifikan antara konsumsi makanan manis, aktivitas fisik, dan obesitas sentral dengan kejadian DM. Kejadian DM di Pulau Sumatera menunjukkan pola autokorelasi spasial secara global. Selain itu, konsumsi makanan manis dan obesitas sentral menunjukkan autokorelasi spasial, namun tidak ditemukan autokorelasi spasial pada variabel aktivitas fisik.

Kata Kunci: Autokorelasi, Diabetes Mellitus, Faktor Risiko, Global Moran's I, LISA.