

ANALISIS RISIKO KESEHATAN LINGKUNGAN AKIBAT PAJANAN PM_{2.5} PADA PEDAGANG DI JALAN RAYA KOMSEN KOTA BEKASI TAHUN 2025

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Abstrak

Particulate Matter 2,5 (PM_{2.5}) merupakan polutan udara berukuran sangat kecil yang berbahaya bagi kesehatan. Di wilayah Jalan Raya Komsen, Kota Bekasi, konsentrasi PM_{2.5} tergolong tinggi akibat lalu lintas padat dan aktivitas industri. Penelitian pendahuluan menunjukkan bahwa konsentrasi PM_{2.5} pada pukul 08.00 mencapai 117 µg/m³ dan 143 µg/m³ di dua titik pengukuran, melebihi ambang batas aman sehingga dapat meningkatkan risiko Kesehatan. Penelitian ini bertujuan menganalisis tingkat risiko kesehatan (*Risk Quotient/RQ*) akibat pajanan PM_{2.5} serta mengetahui hubungan antara intake PM_{2.5}, status merokok, riwayat penyakit, dan jarak tempat berdagang dari sumber polusi terhadap nilai RQ. Metode yang digunakan adalah pendekatan kuantitatif dengan desain *cross-sectional* dan analisis risiko kesehatan lingkungan (ARKL). Data dianalisis secara bivariat menggunakan uji Chi-Square dan uji korelasi Spearman. Sebanyak 103 pedagang dipilih sebagai responden dengan Teknik purposive sampling. Data diperoleh melalui wawancara, pengukuran konsentrasi PM_{2.5} menggunakan *Air Quality Monitor* (AQM), dan pengukuran jarak menggunakan *measurement tape*. Hasil menunjukkan sebanyak 7,8% responden memiliki nilai RQ > 1. Variabel *intake* menunjukkan hubungan signifikan dengan RQ ($p < 0,001$), sedangkan status merokok, riwayat penyakit, dan jarak tidak menunjukkan hubungan yang signifikan. Diperlukan intervensi berupa edukasi, penggunaan alat pelindung diri, dan pembatasan durasi pajanan untuk mengurangi *intake* PM_{2.5}.

Kata Kunci: PM_{2.5}, intake, Risk Quotient, pedagang, ARKL

ENVIRONMENTAL HEALTH RISK ANALYSIS OF PM_{2.5} EXPOSURE IN TRADERS AT KOMSEN MAIN ROAD BEKASI 2025

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Abstract

Particulate Matter 2.5 (PM_{2.5}) is an airborne pollutant with a tiny particle size and harmful effects on human health. In the Komsen area of Bekasi City, PM_{2.5} concentrations are high due to dense traffic and industrial activities, increasing health risks, particularly for street vendors who are continuously exposed. Preliminary measurements showed that PM_{2.5} concentrations at 08:00 reached 117 µg/m³ and 143 µg/m³ at two locations, exceeding the safe threshold. This study aimed to analyze the Risk Quotient (RQ) due to PM_{2.5} exposure and examine the relationship between RQ and variables including intake, smoking status, disease history, and distance from pollution sources. A quantitative cross-sectional design was used with the Environmental Health Risk Assessment method. No less than 103 vendors were recruited as respondents using a purposive sampling technique. Data were collected through interviews, direct PM_{2.5} measurements using an Air Quality Monitor, and distance measurements using a measurement tape. Intake and RQ values were calculated, and bivariate analysis was conducted using the Chi-square test and spearman correlation test. A total of 7.8% of respondents had RQ > 1. Intake was significantly associated with RQ ($p < 0.001$). Recommended interventions include exposure time limitation, use of personal protective equipment, and health education.

Keywords: PM_{2.5}, intake, Risk Quotient, street vendors, EHRA