Karakteristik risiko kesehatan remaja siswa SMPN 16 Bandung akibat pajanan inhalasi debu particulate matter <2,5 (PM2,5) = Characteristic of health risks on students in Junior High School 16 Bandung due to dust inhalation exposure of particulate matter <2,5 (PM2,5)

Ony Rosalia, author

Abstrak

Peningkatan kendaraan transportasi menyebabkan pencemaran udara. PM2,5 polutan utama memiliki pengaruh besar terhadap kesehatan. Kondisi cekungan Bandung menyebabkan polutan terperangkap karena penyebaran polutan terhambat. Penelitian bertujuan menganalisis risiko kesehatan pada remaja siswa SMPN 16 Bandung akibat pajanan inhalasi PM2,5 di lingkungan sekolah. Desain studi Analisis Risiko Kesehatan Lingkungan ARKL . Pengukuran konsentrasi PM2,5 dilakukan pada 10 titik menggunakan Haz Dust EPAM 5000. Sampel siswa kelas VIII sebanyak 66 siswa yang dipilih secara acak. Rata-rata konsentrasi PM2,5 sebesar 29,34 g/m3 , masih di bawah nilai baku mutu menurut PP Nomor 41 Tahun 1999 65 g/Nm3. Adanya peningkatan Intake realtime, 3 tahun dan 12 tahun secara berturut-turut 7.53x10-5, 1.25x10-4, 5.02x10-4 mg/kg/hari. Intake PM2,5 tinggi pada siswa dengan berat badan rendah dibandingkan dengan siswa dengan berat badan yang besar. Estimasi risiko kesehatan dinyatakan sebagai risk quotient RQ yang dihitung dari rata-rata intake pajanan PM2,5 terhadap siswa dan dosis referensi RfC , RQ>1 menunjukkan risiko perlu dikendalikan. Hasil analisis dengan durasi pajanan realtime, 3 tahun, dan 12 tahun menunjukkan batas aman terhadap pajanan PM2,5 RQ < 1 . Secara keseluruhan siswa kelas VIII tidak berisiko terhadap pajanan inhlasi PM2,5 di Lingkungan sekolah.

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Increase in transport vehicles causes air pollution. Major pollutant of PM2.5 provides an enormous impact on health. Basin condition in Bandung causes the pollutants to be trapped because the pollutant cannot be released. The aim of this research is to analyze the health risks of junior high school students of SMPN 16 Bandung due to PM2.5 inhalation exposure in the school environment by using Environmental Health Risk Assessment method. PM2.5 concentration assessment was conducted at 10 points with a sample of 66 students rsquo grade VIII selected randomly. The average concentration of PM2.5, which was 29.34 g m3 was still below the standard value regulated by Government Regulation No. 41 of 1999 65 g Nm3. The increased in real time intake for 3 years and 12 years respectively were 7.53x10 5, 1.25x10 4, 5.02x10 4 mg kg day. PM2.5 intake was higher in students with light weight than students with heavy weight. Estimated health risks was expressed as risk quotient RQ calculated from the average of PM2.5 exposure intake on students and reference dose RfC , RQ 1 indicated the risk needed to be controlled. The results of the analysis with the duration of real time exposure for 3 years and 12 years showed a safe limit to PM2.5 exposure RQ.