Tingkat risiko pajanan timbal udara ambien terhadap gangguan kesehatan siswa sekolah dasar menurut variasi temporal di Kelurahan Muncul Kecamatan Setu Kota Tangerang Selatan = Risk level of exposure to ambient air lead with health effects among elementary school students based on temporal variation in Kelurahan Muncul Kecamatan Setu Tangerang Selatan City

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Abstrak

Bensin bertimbal sudah dihapuskan di Indonesia sejak Tahun 2006, namun kualitas udara di Indonesia masih menunjukkan kadar timbal yang tinggi. Pajanan timbal yang terus-menerus ada dan anak-anak yang terus-menerus terpajan, pada akhirnya berpotensi menjadi ancaman. Penelitian ini bertujuan untuk mengetahui besaran risiko pajanan timbal udara ambien, dan efek kesehatan pada siswa sekolah dasar (SD) di Kelurahan Muncul, Kota Tangerang Selatan. Metode penelitian ini menggunakan pendekatan Public Health Assessment dengan menggabungkan metode analisis risiko kesehatan lingkungan dan Type-1 Health Study. Konsentrasi timbal udara ambien menggunakan data hasil pemantauan Pusarpedal Tahun 2011–2013. Data karakteristik siswa SD dikumpulkan dengan wawancara menggunakan kuesioner. Evaluasi efek kesehatan mengacu pada efek kritis dari pajanan timbal secara inhalasi, yaitu gangguan pernafasan, anemia, gangguan mental emosional dan hiperaktif, penurunan IQ, dan gangguan saraf. Hasil penelitian menunjukkan bahwa rata-rata konsentrasi timbal udara ambien yaitu 0,185 g/m3 pada Tahun 2011, 0,052 g/m3 pada Tahun 2012, dan 0,123 g/m3 pada Tahun 2013. Besaran risiko pajanan timbal pada siswa SD di Kelurahan Muncul kurang dari 1 yang berarti belum berisiko. Proporsi penyakit yang paling sering dialami siswa SD yaitu gangguan pernafasan (44%), dan demam disertai gangguan pernafasan (26,2%). Proporsi efek kesehatan lain yang ditemui antara lain mengarah kepada tanda dan gejala gangguan saraf (7,1%), mengarah kepada tanda dan gejala gangguan mental emosional dan hiperaktif (56%), mengarah kepada tanda dan gejala anemia (67,9%), serta tanda dan gejala indikasi susah mengikuti pelajaran/terkait IQ (54,8%). Perlu dilakukan penelitian lanjutan, selain itu pemerintah juga perlu meninjau kegiatan penghasil timbal dengan melibatkan lintas sektor dan melakukan kajian baku mutu timbal udara ambien.
.....Leaded gasoline has been prohibited in Indonesia since year 2006; however the ambient air quality is still indicating high level of lead. Regarding this, continuous lead exposure has become potential threat for children. The purpose of this study was to describe the risk level of exposure to ambient air lead and its effect to the health of elementary school students in Kelurahan Muncul, Kota Tangerang Selatan. The study method used was public health assessment with the combination of environmental health risk analysis and type 1 health study. The concentration of ambient air lead was obtained from observational data of Pusarpedal year 2011-2013. The characteristic of subjects was collected from interview data using questionnaire. Furthermore, the health effect measurement referred to the critical effect of inhaled lead exposure, namely respiratory distress, anemia, mental emotional and hyperactive disorders, IQ decline and neurological disorders. This study found the average number of ambient air lead concentration in 2011, 2012 and 2013 which was 0.185 ug/m3, 0.052 ug/m3 and 0.123 ug/m3 respectively. The risk level of exposure to ambient air lead among subjects was found less than one showing no risk. Nearly half of them were suffered

from respiratory distress (44%) and fever accompanied respiratory distress (26.2%). Besides those, other health effects found among subjects were leaded to the symptoms and signs of anemia (67.9%), mental emotional and hyperactive disorders (56%), learning difficulties at school and IQ-related problem (54.8%) and also the symptoms and signs of neurological disorders (7.1%). These study findings emerge the need of governments action to review the lead-producing activity with the involvement of other sectors. Also, the findings suggested further research about ambient air quality lead.