



UNIVERSITAS ANDALAS

**ANALISIS RISIKO KESEHATAN LINGKUNGAN PAJANAN
TIMBAL (Pb) PADA AIR SUMUR MASYARAKAT DI SEKITAR
TPA AIR DINGIN KOTA PADANG TAHUN 2024**

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FAKULTAS KESEHATAN MASYARAKAT

UNIVERSITAS ANDALAS

PADANG, 2024

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xii + 96 halaman, 20 tabel, 12 gambar, 10 lampiran

ABSTRAK

Tujuan Penelitian

Berdasarkan penelitian terdahulu tahun 2018, diketahui konsentrasi Pb 0,1050 mg/l di TPA Air Dingin. Masyarakat dapat berpotensi terpajan timbal melalui air sumur yang digunakan sebagai air minum dan MCK. Penelitian ini bertujuan menganalisis tingkat risiko kesehatan lingkungan pajanan timbal pada air sumur masyarakat di sekitar TPA Air Dingin.

Metode

Penelitian ini menggunakan metode Analisis Risiko Kesehatan Lingkungan, dilaksanakan pada Juli 2023 hingga Juli 2024 di sekitar TPA Air Dingin. Sampel masyarakat 76 responden dan sampel air 38 titik dengan jarak 0-500 meter dari TPA menggunakan teknik *purposive sampling* dan pengujian melalui metode *Spektrofotometer Serapan Atom* (SSA).

Hasil

Konsentrasi rata-rata Pb pada 38 titik air sumur adalah 0,1 mg/L. Analisis pajanan *intake realtime* dan *lifetime* sebesar 0,0019 mg/kg/hari dan 0,0032 mg/kg/hari. Karakteristik responden dengan rata-rata berat badan 58,87 kg, laju asupan 2,86 liter/hari, frekuensi pajanan 350 hari/tahun dan durasi pajanan 13,96 tahun. Nilai R_D yang digunakan yaitu 0,0035 mg/kg/hari. Nilai rata-rata RQ *realtime* 0,45 dan RQ *lifetime* 0,8.

Kesimpulan

Karakteristik tingkat risiko *intake realtime* dan *lifetime* masyarakat TPA Air Dingin berkategori aman RQ < 1. Pada tingkat risiko secara individu terdapat RQ > 1 maka disarankan bagi masyarakat untuk melakukan penyaringan pasir pada air dan menggali air sumur lebih dalam dekat dengan akuifer.

Daftar Pustaka : 77 (1977-2023)

Kata Kunci : ARKL, Timbal, Air Sumur, TPA

FACULTY OF PUBLIC HEALTH

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**ENVIRONMENTAL HEALTH RISKS ANALYSIS OF LEAD (Pb) EXPOSURE
IN THE COMMUNITY WELL WATER NEAR THE AIR DINGIN LANDFILL
PADANG CITY IN 2024**

xii + 96 pages, 20 tables, 12 pictures, 10 attachments

ABSTRACT

Objective

Based on previous research in 2018, Pb concentration of 0.1050 mg/l was found in Air Dingin landfill. Communities can potentially be exposed to lead through well water used as drinking water and toilets. This study aims to analyze the level of environmental health risk of lead exposure in community well water around the Air Dingin landfill.

Methods

This study used the Environmental Health Risk Analysis method, conducted from July 2023 to July 2024 around the Cold Water Landfill. Data was taken from the community samples 76 and water samples 38 points with a distance of 0-500 meters from the landfill using purposive sampling technique and tested using through the Atomic Absorption Spectrophotometer (SSA) method.

Results

The average Pb concentration at 38 well water points was 0.1 mg/L. Realtime and lifetime intake exposure analysis was 0.0019 mg/kg/day and 0.0032 mg/kg/day. The characteristics of respondents shows an average body weight of 58.87 kg, intake rate of 2.86 liters/day, exposure frequency of 350 days/year and exposure duration of 13.96 years. The RfD value used was 0.0035 mg/kg/day. The average realtime RQ value was 0.45 and lifetime RQ was 0.8.

Conclusion

The characteristics of the realtime and lifetime intake risk levels around the Air Dingin landfill are categorized as safe $RQ < 1$. At the individual risk level there is $RQ > 1$, so it is recommended for the community to filter sand in the water and dig deeper well water close to the aquifer.

References : 77 (1977-2023)

Keywords : EHRA, Lead, Well Water, Landfill