

**FAKULTAS KESEHATAN MASYARAKAT  
UNIVERSITAS ANDALAS**

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**NURSE FRANSISKA, No. Bp. 1210333022**

**ANALISIS RISIKO PAJANAN KADAR *TOTAL SUSPENDED PARTICULATE* (TSP) DI UDARA AMBIEN TERHADAP KESEHATAN MASYARAKAT DI KAWASAN INDUSTRI PT. SEMEN PADANG 2016**

Xi + 66 halaman, 8 tabel, 5 gambar, 16 lampiran

**ABSTRAK**

**Tujuan Penelitian**

Industri semen merupakan sektor yang sangat potensial sebagai sumber pencemaran yang akan merugikan bagi kesehatan dan lingkungan, khususnya Total Suspended Particulate (TSP). Kadar TSP yang terukur di perumahan UNAND Blok D adalah sebesar 338, 775  $\mu\text{m}/\text{Nm}^3$ , sedangkan di perumahan Indarung RW.VII adalah sebesar 288,28  $\mu\text{m}/\text{m}^3$ . Hal ini menunjukkan kadar TSP di kawasan industri PT. Semen Padang masih berada diatas ambang baku mutu udara ambien yaitu 230  $\mu\text{m}/\text{Nm}^3$ . Penelitian ini bertujuan menganalisis besarnya risiko yang muncul akibat pajanan TSP di udara ambien pada masyarakat di kawasan industri PT. Semen Padang.

**Metode**

Penelitian ini menggunakan metode analisis risiko kesehatan lingkungan (ARKL). ARKL merupakan metode untuk menghitung tingkat risiko kesehatan akibat pajanan agen-agen pencemar di lingkungan dalam suatu populasi. Populasi adalah masyarakat yang tinggal di kawasan Industri PT. Semen Padang. Sampel diambil menggunakan teknik *Purposive Sampling* sebanyak 94 orang. Sampel udara ambien diambil sebanyak 4 titik di permukiman dengan menggunakan High Volume Air Sampler.

**Hasil**

Kadar TSP yang paling tinggi terdapat di Perumnas Indarung yaitu 62  $\mu\text{m}/\text{Nm}$  sedangkan Kadar TSP terendah yaitu terdapat di lokasi Indarung Atas dengan kadar TSP 22  $\mu\text{m}/\text{Nm}$ . Nilai *intake lifetime* terbesar 0,022 mg/kg/hari terdapat di Perumnas Indarung sedangkan *intake* terkecil 0,0078 mg/kg/hari di Indarung Atas. Sementara itu *intake realtime* terbesar 0,054 mg/Kg/hari terdapat di Perumnas Indarung dengan durasi pajanan 78 tahun, sedangkan intake terkecil 0,0006 mg/kg/hari di Perumahan UNAND Blok D dengan durasi pajanan 1 tahun. Gejala gangguan pernapasan banyak timbul tidak hanya pada daerah yang memiliki kadar TSP tinggi.

**Kesimpulan**

Hasil perhitungan risiko *lifetime* menunjukkan terdapat dua area berisiko yaitu Perumnas Indarung dan Perumahan Unand Blok D, sedangkan hasil risiko *realtime* yang dihitung berdasarkan lamanya seseorang tinggal di satu daerah terdapat penambahan area berisiko yaitu Batu Gadang. Area berisiko tersebut terdapat pada area yang lebih dekat dengan sumber pencemar, memiliki *intake* tinggi, dan kadar TSP tinggi.

**Daftar Pustaka: 40 (1973-2015)**

**Kata Kunci : Analisis Risiko, TSP, industri PT. Semen Padang**

**FACULTY OF PUBLIC HEALTH  
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**RISK ANALYSIS OF CONCENTRATION TOTAL SUSPENDED PARTICULATE (TSP) EXPOSURE IN AMBIENT AIR TOWARDS PUBLIC HEALTH IN INDUSTRIAL AREA OF PT. PADANG CEMENT 2016.**

Xii + 66 pages, 8 tables, 5 pictures, 16 attachments

**ABSTRACT**

**Objective**

The cement industry is a sector with huge potential as a source of pollution that would be detrimental to health and the environment, especially Total Suspended Particulate (TSP). Concentration TSP in the Perumahan UNAND Blok D is 338,775  $\mu\text{m}/\text{Nm}^3$ . While concentration TSP in Perumnas Indarung RW.VII is 288.28  $\mu\text{m}/\text{m}^3$ . The concentration TSP remained above the threshold of ambient air quality standard of 230  $\mu\text{m} / \text{Nm}^3$ . This study aimed to analyze the magnitude of the risk posed by exposure to ambient air TSP in the community in an industrial area of PT. Padang Cement.

**Method**

This study uses the method of analysis of environmental health risks (ARKL). ARKL is a method for calculating the level of the health risks from exposure to agents of pollutants in the environment in a population. The population is people living in the industrial area of Padang Cement. Samples were taken using purposive sampling technique as much as 94 people. Ambient air samples taken as many as four points in settlements using High Volume Air Sampler.

**Result**

Concentration TSP were highest in Perumnas Indarung is 62  $\mu\text{m} / \text{Nm}$  while the lowest levels of TSP which is contained in the location Indarung Atas with concentration TSP of 22  $\text{lm} / \text{Nm}$ . The lifetime intake value 0.022  $\text{mg} / \text{kg} / \text{day}$  are in Perumnas Indarung while the smallest intake of 0.0078  $\text{mg} / \text{kg} / \text{day}$  in Indarung Atas. Meanwhile the largest realtime intake 0,054  $\text{mg}/\text{Kg}/\text{day}$  contained in Perumnas Indarung with exposure duration of 78 years, while the smallest intake of 0.0006  $\text{mg}/\text{kg}/\text{day}$  in Perumahan UNAND Blok D with exposure duration of 1 year. Symptoms of respiratory disorders arise not only in the many areas that have high levels of TSP.

**Conclusion**

Lifetime risk calculation results show there are two areas at risk is the Perumnas Indarung and Perumahan UNAND Blok D, while the results of realtime calculated risk based on duration of one's stay in one area there is a risk that the addition of Batu Gadang area. The risk areas are in the area closer to the sources of pollution, have a high intake and high levels of TSP.

**Bibliography : 40 (1973-2015)**

**Keywords : Risk Analysis, TSP, industrial PT. Semen Padang**