THE EFFECT OF CARBON MONOXIDE EXPOSURE ON CARBOXYHEMOGLOBIN (COHb) LEVELS PARKING ATTENDANT THE PUSAT GROSIR SURABAYA

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ABSTRACT

The parking space inside the Pusat Grosir Surabaya (PGS) building has a high risk of exposure to CO gas caused by the generation of vehicles entering and leaving the parking area. This can affect the COHb levels of parking attendants. This condition causes complaints such as dizziness, nausea and shortness of breath from parking attendants and visitors. The aim of this study was to analyze the effect of CO exposure on blood COHb levels of parking attendants at PGS.

This type of research was observational analytical research with design cross sectional. The population in this study was 34 PGS parking officers with a sample size of 32 people. The sampling technique is carried out using techniques of simple random sampling. The dependent variable is COHb levels and the independent variable is exposure (intake) CO gas, PPE usage habits, and smoking habits. Data collection techniques include measurement, observation and interviews. The data is processed using multiple linear regression analysis with classical assumption tests.

The research results showed that the CO gas levels in the air of the PGS parking lot were below the NAB and the COHb levels of the parking attendants showed that they were still within normal limits (≤3.5%). The average exposure (intake) of CO gas to parking attendants is 0.15 mg/kg/day, with 65.5% of parking attendants using PPE while working, and 90.6% of parking attendants smoking 1 – 10 cigarettes/day.

Based on the research, it was concluded that the COHb levels of PGS parking attendants were not significantly influenced by exposure (intake) CO gas (Sig. = 0.168), PPE usage habits (Sig. = 0.532), and smoking habits (Sig. = 0.753). It is recommended that managers enforce uniform and PPE usage policies, reorganize the direction blower, do medical check-up routine, providing additional nutritious food at least once every 2 days.

Keywords: CO gas, COHb levels, Parking attendant

PENGARUH PAPARAN KARBON MONOKSIDA TERHADAP KADAR KARBOKSIHEMOGLOBIN (COHb) PETUGAS PARKIR PUSAT GROSIR SURABAYA

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ABSTRAK

Ruang parkir di dalam bangunan Pusat Grosir Surabaya (PGS) memiliki risiko tinggi terhadap paparan gas CO yang diakibatkan oleh bangkitan kendaraan yang masuk dan keluar dari tempat parkir. Hal ini dapat berpengaruh terhadap kadar COHb petugas parkir. Kondisi tersebut menimbulkan keluhan seperti pusing, mual, dan sesak oleh petugas parkir serta pengunjung. Tujuan penelitian ini adalah menganalisis pengaruh paparan CO terhadap kadar COHb darah petugas parkir di PGS.

Desain penelitian ini adalah analitik observasional dengan pendekatan cross-sectional. Populasi yang menjadi fokus dalam penelitian ini adalah petugas parkir PGS sebanyak 34 orang dengan besar sampel 32 orang. Teknik pengambilan sampel dilakukan dengan teknik *simple random sampling*. Variabel terikat adalah kadar COHb dan variabel bebas adalah paparan (*intake*) gas CO, kebiasaan penggunaan APD, dan kebiasaan merokok. Data dikumpulkan melalui pengukuran, observasi, dan wawancara, kemudian dianalisis menggunakan metode analisis regresi linier berganda dengan melakukan uji terhadap asumsi klasik.

Hasil penelitian menunjukkan kadar gas CO udara tempat parkir PGS di bawah NAB dan kadar COHb petugas parkir menunjukkan masih dalam batas normal (≤3,5%). Rerata paparan (*intake*) gas CO petugas parkir sebesar 0,15 mg/kg/hari, dengan 65,5% petugas parkir sudah menggunakan APD saat bekerja, dan 90,6% petugas parkir menghisap rokok 1 – 10 batang/hari.

Simpulan penelitian ini bahwa kadar COHb petugas parkir PGS tidak dipengaruhi secara signifikan oleh paparan (*intake*) gas CO (Sig. = 0,168), kebiasaan penggunaan APD (Sig. = 0,532), dan kebiasaan merokok (Sig. = 0,753). Disarankan pengelola menegakkan kebijakan pemakaian seragam dan APD, penataan ulang arah *blower*, melakukan *medical check-up* rutin, pemberian tambahan makanan bergizi minimal 2 hari sekali.

Kata Kunci: Gas CO, Kadar COHb, Petugas parkir