

CORRELATION BETWEEN BLOOD CARBON MONOXIDE AND VITAL CAPACITY AMONG STREET FOOD VENDORS AT GLADAG FOOD MARKET, SURAKARTA, CENTRAL JAVA

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ABSTRACT

BACKGROUND: Carbon monoxide is an emission that comes from incomplete combustion of oxygen and fuel in vehicles. Carbon monoxide can affect human health. It binds hemoglobin to form carboxyhemoglobin (COHb) bond. The COHb bond can cause hypoxia that eventually reduces vital capacity. People who work near heavy traffic are at risk for CO exposure. This study aimed to examine the correlation between exposure to carbon monoxide and vital capacity among street food vendors at Gladag food market, Surakarta.

SUBJECT AND METHODS: This was an analytic observational study with cross-sectional design. A random sample of 38 street food vendors at Gladag food market Surakarta. Carbon monoxide was measured by CO meter. COHb was measured by spectrophotometry. Vital capacity was measured by spirometry. Spearman correlation was used to show the correlation between exposure to carbon monoxide and vital capacity among street food vendors.

RESULTS: There was negative moderate correlation between exposure to carbon monoxide and vital capacity among street food vendors, and it was statistically significant ($r=-0.49$; $p=0.002$).

CONCLUSION: Exposure to carbon monoxide reduces vital capacity among street food vendors.

Keywords: Carbon monoxide, exposure, vital capacity, street food vendors