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**PENGARUH PENURUNAN KUALITAS UDARA
TERHADAP FUNGSI PARU DAN KELUHAN PERNAFASAN
PADA POLISI LALU LINTAS POLWILTABES SURABAYA**

**EFFECT OF POOR AIR QUALITY
ON LUNG FUNCTION AND RESPIRATORY COMPLAINTS
AMONG TRAFFIC POLICEMEN, POLWILTABES SURABAYA**

Christyana Sandra*

ABSTRACT

Some of the air pollutants that may result in respiratory complaints are NO₂, SO₂, and dust particles. These pollutants may irritate respiratory tract, leading to lung function impairment and respiratory complaints. The objective of this study was to analyze the concentration of NO₂, SO₂, and dust in Surabaya. This was an observational analytic study conducted cross-sectionally among traffic policemen and staff policemen in Polwiltabes Surabaya. This study was conducted within the working area of Polwiltabes Surabaya from December 2007 to July 2008. Population of study group was the members of traffic policemen and control group was staff policemen who had met the given criteria. Sample size was 42 persons, 21 persons each from study group and control group. Data analysis used independent two sample t test and multiple logistic regression test. Mean of NO₂ and dust levels had exceeded the established standard, while mean of SO₂ level was still below its established standard. Mean of indoor NO₂, SO₂ and dust levels were still below the established standard. Lung function test revealed that 13 (61.9%) of study group had normal lung function and 8 (38.1%) had mild restrictive impairment. In control group, 19 (76.2%) had normal lung function and 2 (23.8%) had mild restrictive impairment. Study group had restrictive impairment 4 time higher risk and 1,4 time higher risk having obstruction impairment than control group. Study group had respiratory complaints 2 time higher risk than control group. Method of data analysis using multiple logistic regression test revealed that age and SO₂ concentration had significantly affected lung function and respiratory complaints in study group. It must be consider that poor air quality have causative factor into lung function. It is recommended that local government increased public transportation service, provide additional air quality monitoring, transportation arrangement system, and motor exhaust gas should periodically be checked.

Keywords: air pollution, respiratory complaints, lung function, traffic police

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