

## **Malaysian traffic police in highly populated areas: is it safe working outdoors on a daily basis?**

### **ABSTRACT**

Previous studies have reported on the increment in the concentration levels of outdoor air pollution affecting the lung functions among traffic police as they work outdoors, on an average, for 12 hours daily. This paper provides an analysis of the outdoor air pollutant trends. It is novel in considering how it can be used to understand the impact on the 1,149 Malaysian Traffic Police in the states of Kuala Lumpur (KL) and Johor Bahru (JB). The study used 165,604 data from a nine-year database (2009–2017) of selected Malaysian air monitoring stations in KL and JB. The statistical analysis showed that the yearly trends of PM10 were above the Malaysian Ambient Air Quality Guideline (MAAQG) standard while the SO<sub>2</sub>, O<sub>3</sub>, NO<sub>2</sub>, and CO readings were below the standard. An increasing trend was noticed in the total number of vehicles in both states from 2009 to 2017. All the pollutants were positively correlated with each other, indicating that most of the pollutants are from similar sources. There is a strong positive correlation between the total number of vehicles and CO, NO<sub>2</sub>, and O<sub>3</sub>. This study proves the trends and consequences of outdoor air pollutants coupled with the rise in the number of vehicles that can affect respiratory health and well-being of the traffic police personnel. As a resolution to this, an efficient risk control such as air monitoring system for traffic police is necessary. The findings of this study will facilitate its usefulness to the authorities, management, policymakers, and researchers in the years ahead.

**Keyword:** Traffic-related air pollutant; Air quality; Hazardous air pollutants; Respiratory health; PM10