

## **Asthma severity and environmental health risk factor among asthmatic primary school children in the selected areas**

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### **ABSTRACT**

**Problem statement:** The purpose of this study was to assess the severity of asthma and associated risk factors among asthmatic primary school children in the selected urban, industrial and rural areas of Selangor and Kuala Lumpur. **Approach:** A total of 207 respondents were involved in this study, in which 87 were children from the urban areas, 67 children were from the industrial areas and another 53 children were from rural areas. The selection of respondents was based on purposive sampling method, where only asthmatic children who had been diagnosed by physicians were involved. Health records of the children were obtained from the school administration office. Respondents were children from Standard 2 to Standard 5, with informed consent from their parents. A modified ISAAC Questionnaire translated into the Malay language was administered to the children and then completed by the parents. Peak Expiratory Flow (PEF) readings were measured using a peak flow meter Mini Weight Model AFS CE 0120 on Monday, Wednesday and Friday before and after the school hour. Continuous ambient air pollutants (PM<sub>10</sub>, CO, SO<sub>2</sub> and NO<sub>2</sub>) levels were obtained from the Department of Environment. **Results:** Results showed significant influence of PEF reading before and days in the week, on the PEF reading after school among respondents. The severity of asthma among respondents was classified according to the PEF variability, day and night symptoms as well as the respiratory scores. Most of the children had mild and moderate asthma. Statistics showed that PM<sub>10</sub> and allergy to pollen significantly influenced the asthma severity among respondents. **Conclusion:** The air pollutants in term of PM<sub>10</sub> which may contain pollen were higher in the urban and industrial areas. This study provided a confirmatory evidence that the asthmatic children who live in urban and industrial areas have greater risk of developing severe asthma.

### **KEYWORDS:**

Air pollutants; Asthma; Peak expiratory flow and severity; School children

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