

Exposure to PM10 and NO2 and association with respiratory health among primary school children living near petrochemical industry area at Kertih, Terengganu

ABSTRACT

This study was carried out to determine the level of exposure to PM10 and NO2 and its relation to respiratory health among primary school children living near petrochemical industry area at Kertih, Terengganu. This cross sectional comparative study was conducted among 60 children from studied group and 60 children from comparative group. The respondents were selected based on inclusive criteria for this study. Level of exposure of PM10 was measured using DustTrak Aerosol Monitor while level of exposure of NO2 was measured using LaMotte Air Sampling Pump. Questionnaire was used to collect information on respondents' socio-demography background and respiratory symptoms. Lung function test was performed using Spirometer. Results showed that the mean concentration of PM10 (79 g/m³) and NO2 (3.73 ppm) for studied group was higher compared to comparative group, PM10 (49 g/m³) and NO2 (0.14 ppm). As overall, reported respiratory symptoms were significantly higher among studied group compare to comparative group. Significant reduction value of FEV1/FVC% showed that there was airways obstruction for studied group. Findings from this study indicated that exposure to indoor PM10 and NO2 concentrations may increase risk of getting respiratory symptoms and reduction of lung function among primary school children living near petrochemical industry area.

Keyword: PM10; NO2; Respiratory symptoms; Lung function; Primary school children