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Name : Wan Rozita Binti Wan Mahiyuddin, *PhD*
Title : Short-Term Effects Of Air Pollution On Mortality In The Klang Valley, Malaysia
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The problem of urban air pollution is felt worldwide and transcends national boundaries. Malaysia's goal to be a fully industrialized country by 2020 has started impacting on the quality of air in major cities. The main objective of this study is to estimate the mortality risk attributed to air pollution in Klang Valley, Malaysia, based on a seven-year daily data from 2000 to 2006. The mortality data were provided by the Statistics Department. The daily level of five main pollutants, namely, particulate matter less than 10 g/m3 (PM10), nitrogen dioxide (NO2), sulfur dioxide (SO2), ozone (O3) and carbon monoxide (CO) were obtained from the Department of Environment, while relevant meteorological information was obtained from the Meteorological Services Department. The short-term effects of pollutants on daily mortality counts were modeled according to the standard protocol used in the multicity study, the Public Health and Air Pollution in Asia (PAPA) project. Single and multi-pollutant models using Poisson regression with natural spline smoothers for time and weather variables were applied. The results showed significant risks of two pollutants related to natural mortality. In particular, 1-day lag PM10 level, 2-day lag O3 level and the average of O3 at lag0 and 2-day lag were significantly associated with natural mortality in the single pollutant model. These two air pollutants were then combined to construct the multi-pollutant models. The 2-day lag O3 level showed the strongest association with natural mortality after controlling for 1-day lag PM10 level in the multi-pollutant model. All pollutants in the single pollutant model, except for SO2, were found to be significantly associated with respiratory mortality. The highest RR was for the 3-day lag O3 level, followed by the 2-day lag NO2 level. Although none of the pollutants in the multi-pollutant models was found to be significant, O3 relatively has the strongest association with respiratory mortality. The findings on the association between mortality risks and air pollutants, particularly O3 and PM10, are consistent with those of similar studies worldwide. The ER estimates were found to be higher in respiratory mortality than in natural mortality. Also, O3and PM10 were identified as the most harmful pollutants in Klang Valley. The findings of this study contribute substantially to literature in this particular area, while the results are important for improving regulatory process.