

Respiratory health outcomes and air pollution in the Eastern Mediterranean Region: a systematic review

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Abstract: Exposure to air pollution can cause detrimental health and be an economic burden. With newly developed equipment, monitoring of different air pollutants, identifying the sources, types of air pollutants and their corresponding concentrations, and applying mitigation intervention techniques became a crucial step in public health protection. Countries in the Eastern Mediterranean Region (EMR) are highly exposed to dust storms, have high levels of particulate matter (PM) concentrations, and have a unique climatic as well as topographic and socio-economic structure. This is the first study conducted to systemically and qualitatively assess the health impacts of air pollution in the EMR, identify susceptible populations, and ascertain research and knowledge gaps in the literature to better inform decisions by policy makers. We screened relevant papers and reports published between 2000 and 2014 in research databases. A total of 36 published studies met the inclusion criteria. A variety of indoor and outdoor exposures associated with various acute and chronic respiratory health outcomes were included. Respiratory health outcomes ranged in severity, from allergies and general respiratory complaints to lung cancer and mortality. Several adverse health outcomes were positively associated with various indoor/outdoor air pollutants throughout the EMR. However, epidemiological literature concerning the EMR is limited to a few studies in a few countries. More research is needed to elucidate the health outcomes of air pollution. Standardized reliable assessments on the national level for various air pollutants in different regions should be implemented and made publically available for researchers to utilize in their research. Moreover, advancing and utilizing more sound epidemiological designs and studies on the effect of air pollution on the respiratory health outcomes is needed to portray the actual situation in the region.