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Potential Effects of Air Pollution on Human Health

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ABSTRACT

Introduction: One of the biggest challenges of today's era is air pollution, which has a significant impact not only on climate change but also on public and individual health in the short and long term. Therefore, this study aims to review the potential effects of air pollution on human health.
Search Strategy: The study was conducted to review 35 articles between 2011 and 2023. The research was done in databases such as Google Scholar and Science Direct with keywords such as air pollution, air pollutants, human health, and disease.
Results: Based on the results of studies, the effects of pollutants such as nitrogen oxides, sulfur oxides, lead, carbon oxides, suspended particles, and ozone have been investigated. The results show that air pollution can hurt the respiratory or pulmonary system, cardiovascular system, digestive system, skin, nervous diseases, reproductive system, and cancers. In addition, air pollution increases the risk of obesity, high blood pressure, non-insulin-dependent diabetes, chronic headaches, and premature death. The WHO notes that 92% of the world's population breathes poor-quality air. According to WHO data, air pollution is responsible for 16% of deaths from lung cancer, 11% of deaths from chronic obstructive pulmonary disease, 29% of heart disease and stroke, and almost 13% of deaths from respiratory infections. Also, 7 million deaths related to air pollution occur every year. According to the 2015 Global Burden of Disease Study, exposure to PM2.5 is the fifth leading risk factor for mortality (causing 4.2 million deaths) worldwide. Moreover, the results of studies have shown a 69% increase in cardiovascular mortality after acute exposure to air pollution. In 2050, there will be about 300 additional premature deaths and 10,000 more hospitalizations for respiratory symptoms, about 6,000 more chronic bronchitis and cardiovascular diseases, and lost school days.
Conclusion and Discussion: Air pollution is one of the important environmental risk factors for the global burden of disease. Long-term exposure to air pollution may increase the risk of various diseases. It may also have destructive effects on the life span of patients or the exacerbation of disease symptoms. Nevertheless, more vigorous epidemiological studies are necessary to establish the relationship between the adverse effects of air pollution on health.

Keywords: Air pollutants, Air pollution, Disease