

AIR POLLUTION CAUSES OVER 2 MILLION DEATHS ANNUALLY IN INDIA: BMJ STUDY

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November 30, 2023 11:36 pm | Updated 11:36 pm IST - New Delhi

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Burning of fossil fuels cause millions of deaths every year. Image for representational purpose only. | Photo Credit: Getty Images

[Outdoor air pollution from all sources](#) accounts for 2.18 million deaths per year in India, second only to China, according to a modelling study published in *The BMJ*.

The research found that air pollution from using fossil fuels in industry, power generation, and transportation accounts for 5.1 million extra deaths a year worldwide.

This equates to 61% of a total estimated 8.3 million deaths worldwide due to ambient (outdoor) air pollution from all sources in 2019, which could potentially be avoided by replacing fossil fuels with clean, renewable energy, the researchers said. These new estimates of fossil fuel-related deaths are larger than most previously reported values suggesting that phasing out fossil fuels might have a greater impact on attributable mortality than previously thought, they said.

The team, including researchers from Max Planck Institute for Chemistry, Germany, used a new model to estimate all cause and cause-specific deaths due to fossil fuel-related air pollution and to assess potential health benefits from policies that replace fossil fuels with clean, renewable energy sources.

They assessed excess deaths — the number of deaths above that expected during a given time period — using data from the Global Burden of Disease 2019 study, NASA satellite-based fine particulate matter and population data, and atmospheric chemistry, aerosol, and relative risk modelling for 2019, in four scenarios.

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The first scenario assumes that all fossil fuel-related emission sources are phased out. The second and third scenarios assume that 25% and 50% of exposure reductions towards the fossil phase-out are realised. The fourth scenario removes all human-induced (anthropogenic) sources of air pollution, leaving only natural sources such as desert dust and natural wildfires. The results show that in 2019, 8.3 million deaths worldwide were attributable to fine particles (PM_{2.5}) and ozone (O₃) in ambient air, of which 61% (5.1 million) were linked to fossil fuels.

This corresponds to 82% of the maximum number of air pollution deaths that could be averted by controlling all anthropogenic emissions, according to the researchers. Attributable deaths to all sources of ambient [air pollution were highest across South and East Asia](#), particularly in China with 2.44 million per year, followed by India with 2.18 million per year, they said.

The researchers found that most (52%) of deaths were related to common conditions such as ischemic heart disease (30%), stroke (16%), chronic obstructive lung disease (16%) and diabetes (6%). About 20% were undefined but are likely to be partly linked to high blood pressure and neurodegenerative disorders such as Alzheimer's and Parkinson's disease, they said.

Phasing out fossil fuels would result in the largest absolute reductions in attributable deaths in South, South East and East Asia, amounting to about 3.85 million annually, the researchers said. This is equivalent to 80-85% of potentially preventable deaths from all anthropogenic sources of ambient air pollution in these regions, they said.

In high-income countries that are largely dependent on fossil energy, about 4.6 lakh (0.46 million) deaths annually could potentially be prevented by a fossil fuel phaseout, representing about 90% of the potentially preventable deaths from all anthropogenic sources of ambient air pollution, according to the researchers.

They acknowledge that their new model has led to larger estimates than most previous studies. Reasons for this include taking account of all causes in addition to disease-specific deaths and basing their model solely on studies of ambient air pollution.

As such, the researchers said uncertainty remains, but given the Paris Climate Agreement's goal of climate neutrality by 2050, "the replacement of fossil fuels by clean, renewable energy sources would have tremendous public health and climate co-benefits." The ongoing COP28 climate change negotiations in UAE "offer an opportunity to make substantial progress towards phasing out fossil fuels. The health benefits should be high on the agenda," they concluded.

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