

3. Air Pollution in Indian Homes Key Heart Risk Factor: The Lancet Report

Prelims: Environment- Pollution & Waste Management

Mains: GS-III- Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.

Context:

- The report is one of two from a study by the Prospective Urban and Rural Epidemiologic (PURE), both published online in **The Lancet** on Tuesday and presented at the European Society of Cardiology 2019.
- One report looks at common diseases, hospitalisation and death; the other at CVD risk factors in middle-aged adults in 21 countries.

Highlights:

- Household air pollution has emerged as one of the key causes of cardiovascular diseases (CVDs), and 12% of all CVDs in low-income countries are attributable to it, a new report has said.
- Hypertension is the largest risk factor for CVD in low-income countries (which include India), followed by high non-HDL cholesterol and household air pollution.
- Study has highlighted for the first time that household air pollution is also a leading risk factor for heart disease and deaths in India.
 - ❖ The major focus has been ambient air pollution that is pollution rising from motor vehicles and industries.
 - ❖ It is now time to wake up and realise that the pollution we generate in our house is also responsible for significant adverse effects

What is Cardiovascular Disease:

- **Cardiovascular disease.** **Cardiovascular disease** (CVD) is a general term for conditions affecting the heart or blood vessels.
- It's usually associated with a build-up of fatty deposits inside the arteries (atherosclerosis) and an increased risk of blood clots.

Indian Context:

- » Household air pollution is a greater risk factor for CVD in India than diabetes, tobacco use, low physical activity and poor diet.
- » An earlier report from a PURE study (Lancet Respiratory Medicine 2014) showed that Indians had the lowest lung function among the 21 countries studied. At least **65% of homes in India use biomass fuel for cooking and heating.**
- » In urban areas, the **use of mosquito coils, dhoop sticks and agarbattis** contribute to high household air pollution.

Concern:

- » Household air pollution is becoming an important cause of overall and cardiovascular mortality in low-income countries. This is actually a window of opportunity because if the household air pollution can be controlled, we can see significant decrease in mortality including due to cardiovascular disease in India.

CVD and Cancer:

- » The other report, which followed 1,62,534 middle-aged adults in the 21 countries, found that CVD remains the leading cause of mortality among middle aged adults globally, but this is no longer the case in **high-income countries, where cancer is now responsible** for twice as many deaths as CVD.
- » It was estimated that 55 million deaths occurred in the world in 2017, of which approximately 17.7 million were due to CVD.

Explanation

- ❖ That in high-income countries, people have started living longer, so deaths **due to CVD have reduced**, and more are now dying due to cancers.

Way Forward:

- » Most cardiovascular disease cases and deaths can be attributed to a small number of common, modifiable risk factors. While some factors have extensive global effects (eg, hypertension and education), others (eg, household air pollution and poor diet) vary by a country's economic level.
- » **Health policies should focus on risk factors that have the greatest effects on averting cardiovascular disease** and death globally, with additional emphasis on risk factors of greatest importance in specific groups of countries.

Control Measure of Indoor Pollution:

Public Awareness:

- » One of the most important steps in prevention of indoor air pollution is education, viz., spreading awareness among people about the issue and the serious threat it poses to their health and wellbeing.

Change in Pattern of Fuel Use:

- » Fuel use depends on ones' habit, its availability, and most importantly, its affordability.
- » At present, majority of low income families rely solely on direct combustion of biomass fuels for their cooking needs as this is the cheapest and easiest option available to them;
- » However, this could be rectified by promoting the use of cleaner energy sources such as gobar gas which utilizes cow dung to produce gas for cooking.

Modification of Design of Cooking Stove:

- » The stoves should be modified from traditional smoky and leaky cooking stoves to the ones which are fuel efficient, smokeless and have an exit (e.g., chimney) for indoor pollutants.
- » A good example is the one designed by the National Biomass Cookstoves Initiative, of the Ministry of New and Renewable Energy under a Special Project on Cookstove during 2009-2010, with the primary aim of enhancing the availability of clean and efficient energy for the energy deficient and poorer sections of the country.

Improvement in Ventilation:

- » During construction of a house, importance should be given to adequate ventilation; for poorly ventilated houses, measures such as a window above the cooking stove and cross ventilation through doors should be instituted.

Intersectoral Coordination and Global Initiative:

- » Indoor air pollution can only be controlled with coordinated and committed efforts between different sectors concerned with health, energy, environment, housing, and rural development.

Government Initiatives:

Pradhan Mantri Ujjwala Yojana:

- » Pradhan Mantri Ujjwala Yojana is a scheme of the Ministry of Petroleum & Natural Gas for providing LPG connections to women from Below Poverty Line (BPL) households.
- » Under the scheme, five crore LPG connections are to be provided to BPL households.
- » **Need**
 - ❖ In India, the poor have limited access to cooking gas (LPG).

- ❖ The spread of LPG cylinders has been predominantly in the urban and semi-urban areas with the coverage mostly in middle class and affluent households.
- ❖ But there are serious health hazards associated with cooking based on fossil fuels.
- ❖ According to WHO estimates, about 5 lakh deaths in India alone due to unclean cooking fuels.
- ❖ Most of these premature deaths were due to non-communicable diseases such as heart disease, stroke, chronic obstructive pulmonary disease and lung cancer.
- ❖ Indoor air pollution is also responsible for a significant number of acute respiratory illnesses in young children.
- ❖ According to experts, having an open fire in the kitchen is like burning 400 cigarettes an hour.

