Covid-19 & Air-Conditioners

Why in news?

There is a question whether people should be careful about using air-conditioners (AC) in the time of Covid-19.

What are some research predictions?

- A number of researchers have predicted that the novel coronavirus is unlikely to survive high temperatures.
- Additionally, a study by Chinese researchers has concluded that droplet transmission was prompted by air-conditioned ventilation.
- Not many other studies have associated AC use with coronavirus spread.

What are the guidelines?

- The government has issued general guidelines on the use of ACs.
- The Indian Society of Heating Refrigeration and Air Conditioner Engineers (ISHRAE) compiled the guidelines.
- These guidelines are limited to temperature and high relative humidity (RH) in the context of the virus.
- The guidelines say that a **temperature between 24-30°C** should be maintained while operating ACs at home.
- It also says that **relative humidity** levels in the range of **40%-70%** are considered most suitable.
- Recirculation of cool air by ACs must be accompanied by outdoor air intake and exhaust by natural exfiltration.

What is the ISHRAE-cited study?

- ISHRAE cited a study that examined the transmission of the coronavirus in 100 cities of China.
- The study indicated that **high temperature and high humidity reduce the transmission** of influenza significantly.
- ISHRAE states that the studies conducted at various Relative humidity levels using viral culture methods have shown that,
    1. Low temperature (7–8°C) - Optimal for airborne influenza survival
    2. Moderate Temperatures (20.5–24°C) - The survival rate of the virus decreases progressively

3. Higher temperatures (greater than 30°C) - The survival rate of the virus decreases further progressively

What is the significance of the humidity range stipulated?

- The RH is believed to affect infectivity of the coronavirus.
- Moisture in the air plays a primary role in proving protection against respiratory infection.
- Humidity levels of 40-70% are considered the most ideal range for humans to fight pathogens.
- The guidelines state that in dry climate, RH should not fall below 40%.
- ISHRAE notes that 80% RH tend to neutralise the Covid-19 virus.
- Water evaporating from a pan should be kept in the room; this will increase humidity if it falls below 40%.
- Fresh Air intake through a fan filter unit will prevent outdoor dust entry.
- The exhaust through kitchen and toilet exhaust fans should be kept operational.

What is the study that linked COVID-19 with air-conditioning?

- The China-based study was conducted in an air-conditioned restaurant involving 10 positive patients from three family clusters.
- It concluded that droplet transmission was prompted by air-conditioned ventilation.
- It said that the key factor for infection was the direction of the airflow.
- It strongly recommended increasing the distance between tables and improving ventilation.

Source: The Indian Express

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