

Covid-19: Air Quality and Health Issues

Air pollution has endangered human lives and health. In 2016, the World Health Organization estimated that 2.4 million premature deaths occur annually due to it. In 2018, it warned that 9 out of 10 people are breathing poor quality air (WHO 2018). In fact, recent data indicates that air pollution kills 7 billion people every year, and more than 90% of the world's population lives in pollution-sensitive or hazardous areas (Khadka 2020).

Presently, COVID-19 has locked down the world, which has consequently reduced air emissions and improved air quality around the globe, specifically in China, India, Italy and Germany (Hernandez 2020). A study compared the present air pollution levels to the same time in 2019 and found decrease in nitrogen dioxide (NO₂) pollution by an average of 40% across China; and 20-38% across Western Europe and the USA (American Geophysical Union 2020). Another recent study also showed that lockdowns in Europe have played an important role in reducing mortality rate caused by air pollution with 11,000 fewer deaths in the region (Broom 2020).

Global lockdowns have shut down industries, bound people to work from home, increasing reliance on virtual work and reducing use of transport with a significant impact on air quality. For instance, the epicenter of the coronavirus - Wuhan (China) has experienced a drop of 44% in PM_{2.5}; Seoul (South Korea) has experienced a drop of 54%; and New Delhi (India) has observed 60% drop in PM due to sustained lockdown (Venter et al. 2020). Similarly, London (United Kingdom) experienced 26% reduction in NO₂ during the lockdown period in comparison to pre-lockdown (Greater London Authority 2020).

Research conducted in China early this year showed that in the vicinity of people having short-term exposure to higher concentration of PM_{2.5}, PM₁₀, NO₂, O₃ and CO are at greater risk of getting infected with COVID-19 (Yongjian et al. 2020). Similarly, based on pre-pandemic research evidence, many researchers have hypothesized that air pollution might act as carrier of COVID-19 (Setti et al. 2020). At the regional level, in South Asia, 2019's top three most air polluted countries - India, Pakistan and Bangladesh, are now breathing in relatively cleaner air (Dahiya and Butt 2020), but for how long?

When it comes to health of people, COVID-19 has been found to have a strong linkage with air pollution. Millions of people suffer from major health issues like respiratory diseases making them more vulnerable to the serious threats and impacts of COVID-19 such as virus contraction, more hospitalisation and more death in the end (Clean Air Fund 2020). This panel will, therefore, focus on the following issues:

- impact of COVID-19 on the health of positive cases in the regions with unhealthy air quality;
- how unhealthy air quality have differently impacted different regions (underdeveloped, developing and developed countries); and,
- how use of technology and online platforms has helped people overcome the issues of unhealthy air quality and COVID-19.

References

American Geophysical Union, 2020, 'COVID-19 Lockdowns Significantly Impacting Global Air Quality', <<https://www.sciencedaily.com/releases/2020/05/200511124444.htm>>.

Broom, D. 2020, '11,000 Deaths Avoided during Lockdown in Europe – Thanks to Cleaner Air', World Economic Forum [Online], <<https://www.weforum.org/agenda/2020/05/coronavirus-lockdown-cuts-air-pollution-deaths-avoided/>>.

Clean Air Fund 2020, 'Breathing Space: Why and How We Must Build Back Better to Achieve Clean Air for All', <<https://www.cleanairfund.org/assets/documents/Clean-Air-Fund-Breathing-Space-Report-June-2020.pdf>>.

Dahiya, S. and Butt, D. 2020, 'Air Quality Before and After National Lockdown during Coronavirus Disease (COVID-19) Outbreak across Pakistan', Centre for Research on Clean Air [Online] <<https://energyandcleanair.org/air-quality-before-and-after-national-lockdown-during-coronavirus-disease-covid-19-outbreak-across-pakistan/>>.

Greater London Authority 2020, 'Estimation of Changes in Air Pollution in London During the COVID-19: Response to the UK Government's Air Quality Expert Group Call for Evidence', April, <[outbreakhttps://www.london.gov.uk/sites/default/files/london_response_to_aqeg_call_for_evidence_april_2020.pdf](https://www.london.gov.uk/sites/default/files/london_response_to_aqeg_call_for_evidence_april_2020.pdf)>.

Hernandez, M. 2020, 'This is the Effect Coronavirus Has Had on Air Pollution All Across the World', World Economic Forum [Online], <<https://www.weforum.org/agenda/2020/04/coronavirus-covid19-air-pollution-environment-nature-lockdown/>>.

Khadka, N.S. 2020, 'Air Pollution Linked to Raised Covid-19 Death Risk', *BBC News*, <<https://www.bbc.com/news/health-52351290>>.

Setti, L. Passarini, F. De Gennaro, G. Barbieri, P. Perrone, M.G. et al. 2020, 'SARS-Cov-2RNA Found on Particulate Matter of Bergamo in Northern Italy: First Evidence', *Environmental Research*, vol. 188, September, 109754, <<https://www.sciencedirect.com/science/article/pii/S0013935120306472?via%3Dihub>>.

Venter, Z.S. Aunan, K. Chowdhury, S. and Lelieveld, J. 2020, 'COVID-19 Lockdowns Cause Global Air Pollution Declines with Implications for Public Health Risk', *medRxiv*, <<https://www.medrxiv.org/content/10.1101/2020.04.10.20060673v1>>.

WHO 2018, 'New Release: 9 out of 10 people Worldwide Breathe Polluted Air but More Countries Are Taking Action', World Health Organization [Online] <<https://www.who.int/news-room/detail/02-05-2018-9-out-of-10-people-worldwide-breathe-polluted-air-but-more-countries-are-taking-action>>.

Yongjian, Z. Jingu, X. Fengming, H. and Liqing, C. 2020, 'Association between Short-Term Exposure to Air Pollution and COVID-19 Infection: Evidence from China', *Science of the Total Environment*, vol. 727, 138704,
<<https://www.sciencedirect.com/science/article/pii/S004896972032221X>>.

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