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Air pollution – COVID-19 – Indoor Air Quality (IAQ)

Air pollution and COVID-19 study requested by European Parliament ENVI committee

This study was published on 13 January 2021 and, while addressing and advocating policies to address the impact of air pollution on diseases, it also deals with Indoor Air Quality and questions such as if ventilation standards, mainly based on CO₂ concentrations, would still be enough.

Air pollution and COVID-19

The subtitle to the 64-page report reads 'Including elements of air pollution in rural areas, indoor air pollution, vulnerability and resilience aspects of our society against respiratory disease, social inequality stemming from air pollution'.

Abstract study: 2.2.10. Methods to improve indoor air quality

In principle, the most effective method to improve indoor air quality is to remove/replace the individual emission sources. A reduction in outdoor air pollution will reduce indoor pollution as a flow-on effect. Taking actions to reduce indoor/outdoor ventilation (e.g. closing windows) may play a role in reducing indoor pollution levels; however, household ventilation is a useful strategy for removing indoor pollutants so it is important to remember that this will also prevent the out-flow of pollution generated indoors and as such is a limited solution.

The role of proper ventilation of indoor spaces as a means to reduce exposure to SARS-CoV-2 has received considerable attention. Existing ventilation standards are mostly designed to prevent high CO₂ concentrations from happening in indoor spaces. CO₂ is produced by normal breathing and has long served as an indicator for perception of stale air caused by human body odours, personal care products and the like. It is unclear whether existing ventilation standards are sufficient to prevent SARS-CoV-2 infections from spreading as this also depends on how many infected persons are present and how much virus is being shed by them.

There are several commercial air purifiers available for purchase, many of which are relatively effective at removing particulate material from the indoor space. In regions where high levels of pollution are unavoidable (e.g. heavily polluted areas in Low- and Middle-Income Countries (LMIC) or regions prone to high outdoor pollution from wildfires) these devices may play an important role in improving indoor air quality. However, the effectiveness of these devices varies widely by design and type and are generally unable to clear gaseous compounds from the air, limiting their overall role in public health. Indeed, the recent WHO report on personal interventions concluded that such individual level interventions were the least desirable in the hierarchy of interventions, especially when compared to public policies focussed on emission reduction.

Study recommendations

There are 9 recommendations focussing on human health aspects. Overall policies that protect the population from the effects of air pollution are likely to protect as well against COVID-19 deaths possibly attributable to air pollution.

Recommendation 2: In comparison to outdoor air pollution, the role of indoor air pollution continues to be undervalued. Regulation of indoor pollution has specific challenges, but no-regret policies such as

aggressively discouraging smoking in the home, phase out of woodstoves and improved exhaust of cooking emissions will likely reduce the burden of respiratory and cardiovascular disease in Europe.

The recommendations stress the view that the EU ambitions to significantly lower greenhouse gas emissions are vital. Another one highlights the need to consider COVID-19 outbreaks in relation to air pollution, population density and other spatial variables.

Recommended actions

This study considers the role of ventilation of indoor spaces. While very general, it may provide elements to strengthen the role of good indoor (and outdoor) air quality as vital for future policies.

Related documents and links

All related documents and articles can be found in the respective sections in the right sidebar.

- GEN – 1199.01 – EP air pollution and COVID-19
- Link to study:
[https://www.europarl.europa.eu/RegData/etudes/STUD/2021/658216/IPOL_STU\(2021\)658216_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2021/658216/IPOL_STU(2021)658216_EN.pdf)
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