Climate change and pollution

Air Pollution Reduces Individuals' Life Satisfaction Through Health Impairment
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In this study, we examined the direct and indirect effect of air pollution on individuals' life satisfaction (LS) through health mediation. We used longitudinal individual-level data from "Understanding Society: the UK Household Longitudinal Study" on 59,492 individuals with 347,377 repeated responses across 11 years (2009-2019) that was linked to yearly concentrations of NO_2, SO_2, and particulate matter (PM10, PM2.5) pollution. Generalized structural equation models with multilevel ordered-logistic regression were used to examine the direct effect of air pollution on LS and the indirect effect from health impairment. Higher concentrations of NO_2, SO_2, PM10, and PM2.5 pollutants were associated with poorer health, while poorer health was associated with reduced LS. Mediation analysis showed that air pollution impacted individuals' LS directly and indirectly with the percent of total effect mediated through health being 44.03% for NO_2, 73.95% for SO_2, 49.88% for PM10, and 45.42% for PM2.5.

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Cognitive Aging and Environmental Risk: The Association of Air Pollution Intensity and Exposure Duration with Cognitive Performance among Older Adults in Chile
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A growing body of literature suggests that exposure to air pollutants may contribute to the loss of healthy life years and increase the risk of cognition impairment and dementia. The present study has been designed to explore the association between cognitive impairment among older adults in Chile and their varying levels of intensity and exposure duration of outdoor air pollution.

The analysis employs data from a longitudinal Chilean survey. The residential addresses of each participant were linked to their respective levels of monthly exposure to particulate matter concentration (PM2.5) over the preceding decade. This data was then utilised to calculate the mean level of exposure, in addition to the intensity and duration of periods of high exposure.

Subsequently, an estimation was made of the association between the exposure measures and cognitive performance. The present study found a negative association between the duration and intensity of PM2.5 exposure and cognitive performance. The cognitive domain that demonstrated the greatest response to the exposure was memory.

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