

PEPA

Perception of the exposure to indoor and proximity atmospheric pollution related to health and well-being at the population level

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So far, few data have related health outcomes with subjective perception of the exposure to air pollution at the population level. Yet, objective assessments of the exposure to air pollution are insufficient to characterise individual exposure to air pollution and overall associated risks, because the characterisation of air pollution is mediated by the phenomenon of subjective perception. The PEPA (Perception of Air Pollution) study has cumulated the epidemiological and the psychosocial approaches to address the issue of subjective perception of exposure to air pollution at the population level.

The individuals that had participated in the frame of the Housing & Health study of WHO in 2003 in the town of Angers were targeted. They had filled 2 standardised questionnaires. At the same time, a surveyor had inspected their house and its proximity in order to assess the presence of air pollutants and/or of sources of pollution. In 2008, they were invited to fill in a standardised questionnaire on subjective perception of exposure to air pollution and a subsample of them to perform a semi-structured interview with a psychologist. All instruments dealt with subjective perception of air pollution. Data presented belong to 427 individuals seen in 2003 and to 99 individuals having replied to the questionnaire and 39 individuals having performed the interview with the psychologist seen in 2008. The trend in air pollution between 2003 and 2008 was assessed in a sub-sample of individuals at their home address using the STREET model.

In 2003, there was a "décalage" between the results of the inspection by the surveyor in the house and its proximity and the subjective perception of the exposure to air pollution of the individuals. The individuals reported to be less exposed to air pollution than in the reality. At that period, individuals did not implicate air pollution in the development and aggravation of their health conditions but in the case of a diagnosis of depression, which was significantly related to some indoor hazards, and of well-known relationships (passive smoking and respiratory diseases, dust and allergies...).

In 2008, the discontent for indoor air pollution had increased and was significantly related to the general and physical health and to anxiety of the occupants, which could be due to the use of a more appropriate instrument for the assessment of subjective health.

Results were confirmed when considering the proximity pollution. Semi structured interview confirmed the results of the epidemiological questionnaires but provided further important information.

Between 2003 and 2008, air pollution levels diminished and in the sub-sample of individuals who participated, the evolution of subjective perception of the exposure to air pollution was favourable for the noise and the satisfaction with indoor air quality.

Well-being was constant during the same period.

The PEPA Study constitutes a first attempt to quantify subjective perception of air pollution and shows a gap between objective assessments and subjective assessment of air pollution. Depression and or anxiety were found to be the most related conditions to subjective perception of air pollution. Further investigations are needed to better understand the role of subjective perception of air pollution in order to better plan preventive action. Furthermore, national and international comparisons are needed.

Key words: *Atmospheric pollution, indoors, outdoors, subjective perception, objective assessments, well-being, depression, anxiety, asthma, allergy, respiratory diseases*