

# DIFFERENCES IN AIR QUALITY PERCEPTION PATTERN BETWEEN INDUSTRIALISED AND URBAN AREAS IN SOUTHERN SPAIN, AND ITS RELATIONSHIP TO MODELLED AMBIENT NITROGEN DIOXIDE

**Piedad Martín-Olmedo**, *Andalusian School for Public Health. Cuesta del Observatorio 4. 18080 Granada (SPAIN)*

**Pablo Sánchez-Villegas**, *OSMAN. Andalusian School for Public Health. Granada (SPAIN)*

**Antonio Daponte**, *OSMAN. Andalusian School for Public Health. Granada (SPAIN)*

**Pilar Rueda**, *OSMAN. Andalusian School for Public Health. Granada (SPAIN)*

**Virginia Ballesteros**, *OSMAN. Andalusian School for Public Health. Granada (SPAIN)*

**Background and aims:** Annoyance due to environmental stressors impairs well-being, and is being recognised as an adverse health effect itself. This impact is meant to be greater in highly industrialised areas where the issue of outdoor air quality generates ongoing controversial debates. However, individual perception has not been always consistently related to actual central site measurements of air pollution. The objective of this study is to describe spatial pattern of public perception of air quality attending to characteristics of local settings (industrialised versus urban area), certain individual and social determinants, and its relationship to a GIS-based kriging nitrogen dioxide (NO<sub>2</sub>) measurement.

**Methods:** Annoyance scores were extracted from a community health survey undertaken at the industrialised area of Gibraltar's surroundings (GS), based in population from Algeciras, La Línea, San Roque y Los Barrios (total n=360), and at the city of Seville (n=650). Respondents' exposure to NO<sub>2</sub> was estimated using a GIS-based kriging approach built over a passive diffusion tubes campaign. The associations were examined using multivariate logistic regression.

**Results:** The concentration (mean, standard deviation) of NO<sub>2</sub> in the GS (29.55, 5.39 µg/m<sup>3</sup>) was significantly ( $p < 0.05$ ) higher than in the city of Seville (28.29, 2.53 µg/m<sup>3</sup>). Similar trend showed findings related to public air quality perception, with significantly ( $p < 0.05$ ) greater concern among citizens from GS (71.35%) than those from Seville (30.05%). However, the relationship between public perception scores and NO<sub>2</sub> levels showed a very different pattern in the urban area of Seville (positively related) than in the industrialised setting of GC.

**Conclusions:** Personal and socio-demographic determinants of public air quality perception needs to be addressed independently depending on the local settings characteristics.