

SMALL-AREA STUDIES OF ENVIRONMENT AND HEALTH IN ITALY: ACCOUNTING FOR SOCIOECONOMIC DEPRIVATION

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Background and Aims: Data for small-area studies in Italy are available at census tract and municipality level. The aim of the present contribution is to ascertain whether an *ad hoc* developed Deprivation Index (DI) can adjust for deprivation in SENTIERI, a multicentric small-area study at municipality level in Italian Polluted Sites – IPS.

Methods: The DI adopted in SENTIERI is based on four socioeconomic variables from the 2001 census, already included in a National DI. Each IPS' municipality was assigned to a quintile of DI on the basis of the distribution of the sum of Z scores, for the selected variables computed at regional level. Standardized Mortality Ratios (SMR) (1995-2002) with regional reference were computed for either gender, for each municipality, both crude and adjusted for deprivation. Conditions for potential confounding were verified by selecting outcomes with probable causal association with both pollution and socioeconomic status, and by analyzing the most and the less deprived municipalities.

Results: First results for lung cancer in two IPSs selected as above explained, showed a change in SMR estimates as expected when adjusting for DI. In the selected least deprived municipality crude and adjusted SMR were respectively 123 (IC 90% 108-138) and 131 (116-147) for males; the corresponding estimates for females were 148 (109-197) and 155 (114-207). In the most deprived municipality crude and adjusted SMR were respectively 120 (109-132) and 106 (96-116) for males; the corresponding figures for females were 134 (115-156) and 102 (87-119).

Conclusions: The results suggest that the adopted DI adjusts for socioeconomic status. The interaction between deprivation and environmental exposures should be better investigated. Also the effect of *resilient* areas and reverse causality phenomena on risk estimates should be better clarified.

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