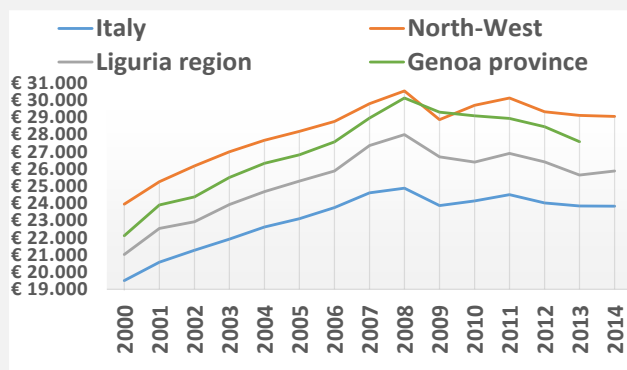


Effects of economic crisis and social involution on cancer mortality in an Italian metropolitan area: the Genoa case

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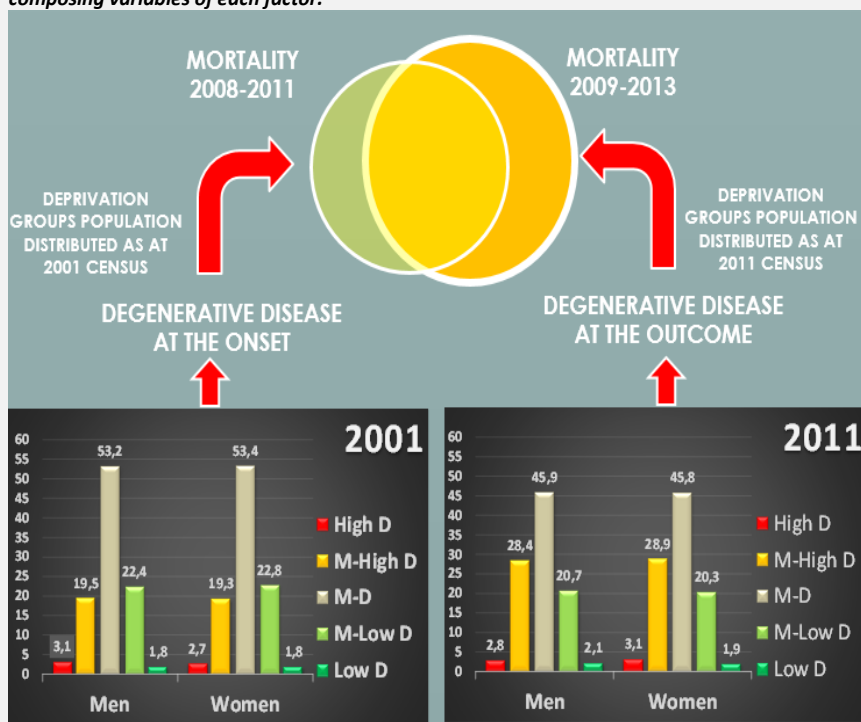
Background and aims - Genoa was hit by economic, demographic and social involution. Significant effects were seen on the health of residents and on their ability to take care of diseases at individual, family or collective level on the base of the individual SES and of the surrounding small area (Census Tracts, CT). The time evolution of society and the economic conjuncture influenced both the individual and the area wellness.

Material and Methods - To build the Socio-Economic and Health Deprivation Indices (SEHDIs) at census tract level, linear regression, factors and clusters analyses were employed. The factors of the SEHDI 2001 explain a total variance of 72% and those of SEHDI 2011 a variance of 72,2%. In the Table the percent of explained variance and the composing variables of each factor.

Graph 1 – Gross value (added at basic prices for inhabitant) in the period 2000-2014.

	Factor 1 = 26,8%	Factor 2 = 15,2%	Factor 3 = 15,0%	Factor 4 = 15,0%
2001	% entrepreneurs and professionals % high school diploma and university degree	% married	% 2-members families	% of house with very small kitchen or kitchenette
2011	Index of structural dependence Old age index % widowers/windows	% single-parent families % single-parent families with children <15 years	% married families % 2-members families	% rented homes % lower secondary school

Table 1 – Factors of the SEHDI 2001 (total explained variance 72%) and SEHDI 2011 (total explained variance 72,2%). Percent of total explained variance and composing variables of each factor.



The SMRs by cause were computed for the five normalised groups at decreasing deprivation individuated by the SEHDIs, and two ANOVA analyses performed to evaluate the statistical significance of differences in death distribution among groups.

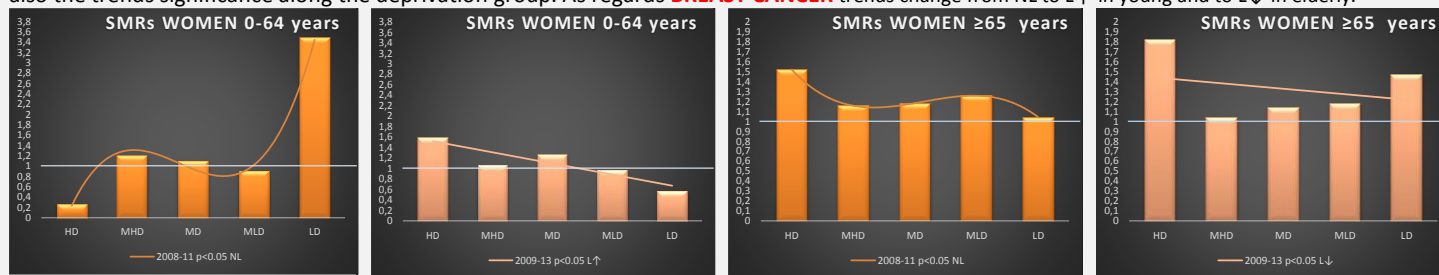
We describe the association between mortality by cause, gender, age and deprivation in five subsets of Genoese population at increasing deprivation, identified applying two Health-correlated Socio-Economic Indices of Deprivation, which referred to the situations at the 2001 and 2011 censuses.

The mortality of 2008-2011 and 2009-2013 periods was analyzed. The two periods were overlapping for three years, then, the considered individuals were mostly the same.

The SEHDI 2001, applied to the mortality of 2008-11 period, resulted useful to describe the distribution of Socio-Economic and Health (SEH) situation of the individuals at or before the onset of disease.

The SEHDI 2011, applied to the 2009-13 mortality, takes better account of the relationships between SEH and outcomes of disease (that means the problems of taking charge during the most severe period).

Results - The Standardised Mortality Ratios (SMR, Liguria region rates as standard) and their statistical significance ($p < 0.05$) were analysed evaluating also the trends significance along the deprivation group. As regards **BREAST CANCER** trends change from NL to L \uparrow in young and to L \downarrow in elderly.



The breast cancer risks, related with reproductive and hormonal factors, were cited as prevalent in the higher social classes, while the obesity, strong predictor of post-menopausal cancers, is capable to explain positive trends due to its increase among the less educated women. The Genoa trends, positive in young women and negative in the older one, seem to be coherent with the aforementioned findings.

General conclusions - Most trends confirmed the literature about populations lapsing towards poverty. They revealed ageing-linked social risks and reflected poor social-health care. Moreover, serious problems in younger singles or in householder of a single-parent family emerged.