The Elderly Health Condition in Italy: a Multilevel Approach

La condizione di salute degli anziani in Italia: un approccio multilevel

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1. Introduction

During the last 30 years there has been a great attention in the study of perceived health and many researchers started to show an interest in establishing its correlates and predictors (Unden, Elofsson, 2001). In particular these studies are focalized on the health condition of the elderly, for whom frequently is present a negative health status. In fact when people grow older the risk to have worse subjective health is higher.

By one hand it is important to develop an analysis at micro-level to highlight the factors that have an impact on perceived health. By the other hand the individual characteristics have to be also related to the macro-level: environment, socio-economic and familiar context.

2. Data and methods

Data come from the Italian health interview survey carried out by Istat in 2004/2005. This is a very wide cross-sectional survey based on a sample of 60 thousand families, for a total of around 130 thousand individuals. It provides a rich amount of information to investigate several dimensions of population health: the “objective” health, referred to the presence of one or more diseases (acute or chronic) and of disability. The “subjective” (or perceived health) is measured through the question suggested by World Health Organization (WHO) “How is your health in general?” (with the following possible answers: very bad, bad, fair, good and very good).

Concerning methods, in order to take into account the hierarchical structure of the sample and, contemporaneously, to assess the possible influence of the context on individual response, a multilevel strategy has been adopted (Goldstein, 2003).

Multilevel modeling in fact recognises the existence of such data hierarchies by allowing for residual components at each level in the hierarchy. Thus the residual variance is partitioned into a between-groups component and a within-groups component, where “group” refers to the units at the higher level of the nesting hierarchy (Italian Regions in this case).

At regional level several aspects have been taken into account. The idea is to use all dimensions that could help identifying the latent dimension of relevance according to
the research purposes, i.e. the extent to which a regional context could be considered as a dimension that impact on the evaluation of self-perceived health.

At individual level the models include control covariates accounting for the main socio-demographic characteristics of the elderly persons.

To evaluate the association between the dependent variable (perceived health) and each covariate, controlling for the influence of the others, a multilevel logistic regression model has been applied.

3. Results

Two separate models for men and women have been estimated. The individual dimensions that have an impact on perceived health both for men and women are: ageing, education level, marital status (only for women), objective health conditions (disability and multicronicity). In depth, people older, with a lower educational level, with a negative objective health are more likely to have a negative subjective health.

As regards to the contextual level (Italian regions), we observe that when we include the macro-level covariates, the individual characteristics do not lose their significance; moreover the macro-variables show a significant impact on subjective health, confirming the existence of both a contextual and individual effect. In this study, the macro variables have been selected according to the hypothesis that the environment (in particular pollution) and availability of health care services, represent risk factors related to the health condition of citizens living in the different Italian regions.

Concerning gender differences, both the second-level variance and the intra-class correlation coefficient (measures that show the dependence of perceived health by the macro level) are statistically significant and their values are greater when estimated in the model for women. The \( \rho \) coefficient (intra-class correlation) for the model with Italian region as macro dimension is equal to 5% for women and 2.4% for men. The values are not very high, but significant. Then when a person rates is health, he/she is influenced also by the place of residence.

References