Ageing and Health in Portugal (1970-2030). Politics and Practise

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Abstract

This paper summarizes the conclusions from a project financed by FCT-PORTUGAL. It addresses the relationship between health status and the rise of Portuguese educational levels in a context of ageing process. We measured the extent and implications of these links from 1970 to 2030, using econometric models and demographic forecast as a tool to support political entities in what concerns health policies, given the changes of costumers profile (typology, quality assessment and market analysis). The impacts of population ageing are known, as well as its consequences on health care and other areas of social policies. Although the economic impacts of those changes are a not consensual, they are inevitable. Individuals are living longer and disability is declining. Health care cost will rise as a direct consequence of a higher number of oldest populations and due to better and more expensive health care treatments, possible by technological improvements. The cost of public pension programs will rise in a context of fewer labour forces to pay. What adjustment might be made? Can the rise of educational levels contribute to reduce the scenario of disruption on national social protection systems? How can an attempted forecast of health status help policy makers to find the adequate answers to assure it in national and regional levels? Most of these questions are already answered for other countries, but not completely solved in national case. Our study: (1) evaluates the effects of social and demographic changes on Portuguese health profile, as well as the support and importance given by politicians to collective welfare and health policies; (2) measures demographic changes crossed with educational level and health status; (3) evaluates the relative influence of the former variables, linking demographic changes with socioeconomic determinants/predictors of health status; (4) points out the major implications of health national policy.

Description

The research Project was financed by the Fundação para a Ciência e Tecnologia and evaluated with the rating Excelent (PTDC/CS-DEM/109967/2009 – granted: 73000 Euros). It addresses the relationship between health status and the predictable rise of Portuguese educational levels in a context of ageing process. We intend to measure the extent and implications of these links for the Portuguese case, crossing theoretical presupposition and demographic and econometrical techniques, which we believe will allow a systhemic overview on the possible impacts for ageing in society for the next decades. Once concluded this first goal, the team will present the research conclusions and open a public debate on the future implications for social and health policies.

Therefore, demographic analysis must be used to support political entities, given the changes occurred in costumers profile. An emphasis on patient's typology, quality assessment and market analysis

made necessary to know and use demographic concepts and methodologies.(11, 12).

Population ageing is now recognised as a global issue. (1) Its impacts are known, as well as its consequences on health care and other areas of social policies. Although the economic impacts of those changes are a not consensual, changes are inevitable. (2, 3) Individuals are living longer and disability is declining in many countries. This is a very positive achievement, but the problem is the decrease in the ratio of young to old persons. As these last ones increases, health care cost may rise, not only as a direct consequence of a higher number of oldest populations, but also due to better and more expensive health care treatments, possible by technological improvements.

On the other hand, the cost of public pension programs will rise, in a context of fewer labour forces to pay.(4, 5, 6) What adjustment might be made as population ages? (7) Can the rise of average of Portuguese educational levels contribute to reduce the possible scenario of relative no sustainability of national social protection systems? How can an attempted forecast of health status help policy makers to find the adequate answers to assure, both in national and regional levels? Most of these questions are already answered for other European countries, but not completely solved in our national case.(5, 8,9,10) Population's demographic characteristics have impacts on health care system in multiple ways. In this Project we try to study the links between demographic changes, health and health care, based on a new research design and methodologies. To accomplish this goal the team is composed by researchers with different academic background and experience on demographic analysis, economy, health and political sciences. Some of them are involved in common research projects.

The project was divided in four major parts:

(1) to evaluate the effects of social and demographic changes on Portuguese health profile, as well as the support and importance given by politicians to collective welfare and health policies;

(2) to measure demographic changes in the last decades of the 20th century, crossed with educational level and health status;

(3) to evaluate the relative influence of each of the former variables, linking demographic changes with socioeconomic determinants/predictors of health status;

(4) to point out the major implications of health national policy and contribute, though a public discussion of the results, to national health plan support. The fact that we propose a regional analysis by NUT III allows a more specific diagnosis and reliable guidelines to decision makers, when deciding public and/or private investment on health services.

The new approach for the Portuguese case is supported in methodological terms by the following exercises:

1. Demographic regional forecast by NUT II by sex, age, educational level (2011-2030)

2. Use of three different sets of database: demographic (Census 1991, 2001, 2011, Demographic Estimations 2006, Vital Statistics 1990-2010); education (Employment Surveys 2006, 2008, 2010); health status perception (Health National Surveys, 1998-99, 2005-06, 2010-11?)

3. A long term interrelated perspective (1990-2030) of demographic, educational and health status variables, pointing out weakness and strongness.

4. A link between the theoretical statistical modelling results, the existing health policies and the opinions of the selected specialists, including the project's consultants (Delphi Model and Seminar)

The items Management Structure and Milestone List provide some additional information on the project's research design.

2.1. Literature Review

Some previous studies have already analysed and connected demographic dynamics and socioeconomic changes, mainly those occurred in Portugal after the political democratization (22, 29, 30). To deepen these aspects and gather sufficient information to evaluate to what extent Portuguese ageing demographic process will influence future directions and imply rearrangements in social and health protection systems, our approach, based on bibliographic research, will emphasize the links between demography, socioeconomic changes and health policies (13). Some of this problematic were inspired by (4, 6, 14) and assure international comparison on these matters. Then, we will focus on the demographic projection methods. Demography has always been future oriented and forecasts of the size, age and sex composition of human populations are made almost routinely and used as a support policymaking decisions (15, 16). But if the use of demographic cohort and survival analysis are increasingly becoming tools for health services research, planning and marketing (11), demographic regional forecast by NUT III by sex, age, educational level between 2011 and 2030 have never been done for Portugal, based on demographic methodology of multi-state population projection by educational level (27). This option introduces a better approach to real populations, as human behaviors are determined by educational background (17). This fact increases the possibility of major forecasting errors, due to subjectivity. This explains why researchers are trying to introduce new variables, namely socioeconomic ones. The main issue in the last few years has been to find out the most reliable and better quantifiable variables to deepen projection models. In what refers to Health Status, the Level of Education seems to be one of the most reliable predictor (27).The projection of Portuguese population by sex, age and educational level for the period 2011-2030 is a new development of a former study in which T. Rodrigues took part (15). Although 9 countries were involved its conclusions were based on static projections by socioeconomic variables, a) using volume estimations, b) assuming England and Wales fertility and mortality models and c) excluding a direct cross projection with data from educational level. We will present some quantitative information on the relationship between socio-economical characteristics and population health status. We will go deeper, by evaluating the impact of population ageing process on health status and health expenditures. Many studies have attempted to determine how individuals' socio-economic characteristics are related to health status (28,32,33,35). Some major findings emerged from these studies: firstly, there exists a significant association between factors like educational level, age, income and self assessed health status. Secondly, the impact of each of these variables on health status depends to some extent on the region/country considered in the study. Finally, some evidence shows that the magnitude of these associations probably did not change over time. Population age and its educational attainments appear to be, within this context, two particularly important determinants of self reported health status. In one hand, older people, when compared with younger, report a worse health status. On the other hand, more educated individuals, when compared with lesser educated ones, reveal an enhanced health status. Since we expect a forthcoming population older, but also better educated, the effect of ageing on heath status is ambiguous. Some studies (20,26) go further and make an attempt to evaluate the impact of ageing on health care expenditures. The findings obtained by these researchers are not conclusive. The study by (26) proposed that proximity to death has a more important influence on health care costs than age, suggesting that demographic changes, per si, will not have a large impact on future aggregate health

expenditures. These findings have been criticized, namely by the studies developed by (20). Using an hospital data set for the UK and population projections by age and sex, the authors concluded that both population ageing and time of death are important determinants of health care costs. The study by (33) introduces another point of view and argued that future changes in the composition of the population by educational level will also affect population's health status and might counterbalance some of the effects of ageing. They have shown that the estimated effect of ageing on health care utilization is different when they take changes in educational attainment of the population into account. Based on several possible scenarios, the authors concluded that the expected rise in the educational level counteracts the expected increases in ill-health based on population ageing to a substantial degree. As a whole, these studies suggested that population ageing will probably have an important impact on population health status. However, this effect is not linear, since many other factors should be taken into account. Literature review shows the need to go further in investigating the relationship between ageing and health, namely in Portugal, for the following reasons: firstly, there are few published studies on this subject, both as a hole and taking into account regional diversity and European context (10, 19, 18); secondly, because ageing phenomena is particularly pronounced in Portugal, although with major internal differences; thirdly because there is a need to reduce the actual health care burden, namely the public expenses with health care use.

2.2. Plan and Methods

The general objective of this project was to evaluate the impact of population ageing in public health policies and practices. To attain this objective in an efficient way, there is a need to interrelate different knowledge domains, namely those related to demography, sociology, economy, public health and political sciences. Most of the published studies look only at one side of the question. For example, demographical ageing studies are concerned with population projections (34). Economic research is more focused on the impact of ageing on health expenses (20, 38). Public Health researchers are worried namely about the effects of ageing in population health status and on the delivery of health care services (32). However, all these issues are connected and have to be analyzed all together. In our study, we will focus all the dimensions of the problem; Firstly, a literature review focused on a global diagnosis on educational levels and health status; secondly, econometric models will be used to evaluate the relationship between socio-economic characteristics and health status. The idea is that inequalities in self-assessed health can be explained by individual characteristics, such as age, education levels, sex and income. Then we will make the population projections (by sex, age and educational level) in order to predict the impact of ageing in health status. Finally, different scenarios for public health policies and practices will be designed and tested, using Delphi Method. These sequences of tasks will be done by a multidisciplinary team, with recognized competencies in the scientific areas mentioned above.

Our study is relevant for the following reasons: firstly, because there is a need to characterize the main trends of Portuguese morbidity and mortality models in the long run, as well as the moments of qualitative social changes and its impacts in public health policies and practices in Portugal. Secondly, because has no reliable projections exist for the Portuguese population by sex, age and educational attainment. Finally, because there are few published studies analyzing the impact of population changes on health status, albeit the importance of the ageing phenomena in Portugal.

Different methodologies were used:

1. (a) identify and characterize the main trends of Portuguese morbidity and mortality models in the long run, (b) try to fully understand and relate these new demographic dynamics with socioeconomic changes occurred in Portugal after the political democratization and improvement in health services; (c) underline the importance of the establishment of National Health Service (NHS) in 1979, which guaranteed the access of all citizens to medical and health care, regardless of their social or economic situation; (d) place NHS and other forms of health care in a nowadays perspective of national social protection system.

2.To evaluate the socioeconomic differences in Health Status econometric methods will be used: (a) to evaluate the extent of future changes in demographic structures by age, sex and educational level and the way they will affect the average health status; (b) to consider ageing phenomenon as a inevitable trend in national terms and forecast the impact on the population's health status due to recent demographic changes in age structure (c) to evaluate to what extent educational levels can be considered as predictors of health status and care needs and finally. as well, the use of demographic cohort and survival analysis is increasingly becoming tools for health services research, planning and marketing(11). We will use demographic multi-state population projection by educational level (25). Population will be divided in 3 educational groups (no education and 1st level), 2nd level (9 school years) and 3rd level (higher education) and assume 2 different scenarios: constant scenario rates (meaning no improvements made over time in the proportion of cohort that acquires different level of education, in spite of the probable changes in demographic models (as followed by International Institute for Applied Systems Analysis (IIASA). This is one of our goals (never done for Portugal), based on information of the regular Employment Surveys and the preliminary results from Census 2011. (d) quantify the relation of self-declared morbidity and educational level, using representative data of the Portuguese population for the years 2005/6 and 2008/9, collected from the 4th and 5th National Health Survey, produced by the Instituto Nacional de Saúde Dr. Ricardo Jorge and the Instituto Nacional de Estatística, in collaboration with the Direcção-Geral de Saúde. Using the logistic regression model, self-declared morbidity is explained, by gender and period of study. As variables of this explanation, educational level, age group, civil state, tobacco habits and chronic or incapacitating disease are used. Results show that, in Portugal, most of these variables are useful to explain the probability of an individual's claim to bad health. (e) to analyze the consequences of the expected compression of morbidity of most aged groups for the coming decades. Finally, Ageing and Health Issues in Public Health Policies will be analyzed, based in a set of specialits (using Delphi Method).

The demographic characteristics of a population always interact in a complex way with the health system. The aim of this project is to cross analyse a set of methodologies in order to promote a better understanding of the impact of ageing in decades to come, taking into consideration that age structure will influence the nature of the health system. Population characteristics change in demographic, social, economic and biological terms. It is therefore relevant to identify these characteristics at national and regional level so as to be able to offer possible scenarios to decision makers and regional planners in what regards the future 'clients' of health services. Portugal shows some asymmetry when distribution and characteristics of ageing as well as access to health care are considered. This issue is important because in terms of educational level there will be significant changes to the present situation. The analysis and inclusion of the educational levels of populations introduces a subtler approach. It will allow for a clarification of the relation between a rise in educational level of the population and its perception of

health, health care needs and evaluation of offered health care. The use of the DELPHI methodology may contribute to confirm the new needs that are identified, since health care experts are heard.

The conclusion of this project will assure: a systemic view on the expected future development of key areas; explore assumptions or expectations about prospective developments; reveal judgements related to each topic; identify interconnections between the topics; to pinpoint the most likely areas of consensus we will use Delphi's methods is a data-gathering tool to aid in the anonymous survey of expert judgments, obtained in a series of rounds, ultimately for forecasting purposes(24); contribute to a better understanding of the impact of changes in Portuguese population structures on health care system, namely the impact of ageing, since Portugal has been slow in providing social response and adequate health care in relation to the phenomenon of ageing; promote the use, among health professionals, of a demographic perspective that highlights demographic issues linked to health status and health behaviour.

There is a growing need to understand health care environment, namely the motivations that underlie consumer behaviour and how it may be connected to demographic characteristics. It is desirable that demographic perspectives and health demographics may be recognized in Portugal as a fundamental area of health care and health policies research. On the other hand we will estimate for the first time in Portugal the relationship between health status and educational level, particularly relevant in a country as ours, where the educational levels attained by older population are still very low.

This situation will probably undergo major changes in the near future, due to a successful improvement in educational levels for adult and elderly people. So, the possible negative impact of death concentration on advanced ages, associated to the rise of incapacitating and chronic diseases, can be counterbalanced by the rise in educational levels; to estimate the extent to which the rising educational level can relieve the future healthcare burden associated with population ageing in Portugal (27). By assuming these various perspectives and methodologies, we believe AgHeP will contribute to a better understanding of ageing and health policies and practices in Portugal.

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