"Ageing and education level. Effect on population health and in health and wellness policies in Portugal"[1]

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The current demographic framework shows an overall process of ageing and may be considered as an inevitable phenomenon generator of new challenges for human societies and to all sectors related to it, including the health sector.

The consequences of the ageing phenomenon in healthcare and other areas of social policies are inevitable and consensual. Some studies have concluded that future changes in education levels of the populations will affect positively their health, and may reduce some of ageing negative effects. Considering this knowledge, the gradual process of ageing, the ongoing increase in the level of education, and the outcome that these demographic changes and population health conditions have a considerable effect in governmental "modus operands", we face the following questions: (1) during the 20th century, social and demographic changes influenced Portuguese population health profile? (2) Which importance as been attributed, at governmental level, to health and well-being policies?

In this investigation, still in development process, we try to study the links between ageing, education, health and health policies, essentially related to health services. In methodological terms our study is based in national and international literature review, existing legislation and statistical data related to the subject.

Between 1930 and 2005 Portugal went through a process of epidemiological and sanitary transition, given the reduction of infectious and parasitary diseases, such as those affecting the respiratory and digestive systems. Simultaneously there was an increase of degenerative diseases such as tumors and others related to circulatory system, in which vascular accidents maintained a prominent position. Nevertheless, the process began earlier with improvements in hygiene, health and nutrition, which led to a decrease in mortality rates, especially infant mortality rate and elderly mortality rate, and increased life expectancy, as we can see in table 1 and figure 1. In this case, vaccination campaigns, health promotion and the use of antibiotics were providential.

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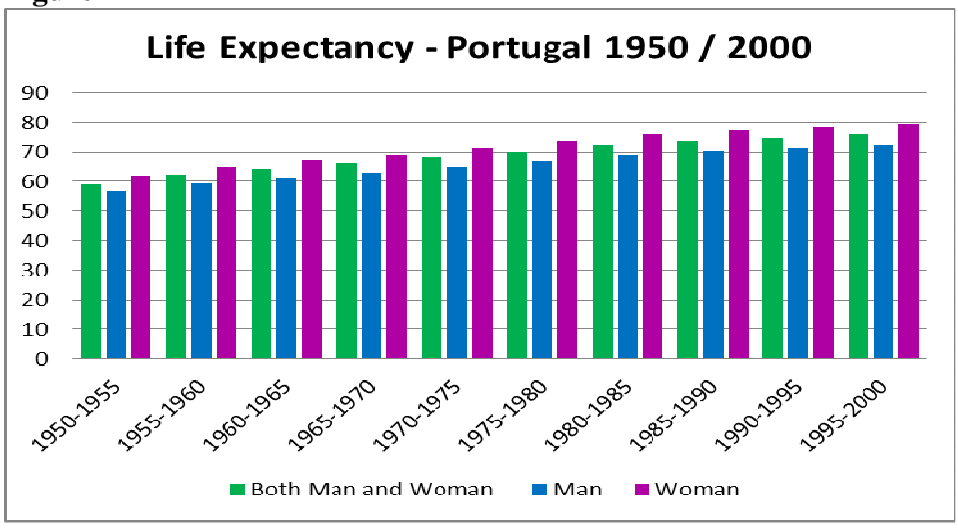
These achievements were not homogeneously made throughout the country and in some more interior regions this process was slower and less energetic.

Table 1

Periods	Mortality Rate (‰)	Infant Mortality Rate (‰)	Life Expectancy Male (yrs)	Life Expectancy Female (yrs)
1900	20.5	> 200	36.2	39.8
1920	23.7	161.0	35.8	40.0
1930	17.1	143.6	44.8	49.2
1940	15.9	126.1	48.6	52.8
1950	12.2	98.0	55.5	60.5
1960	11.0	83.5	60.7	66.8
1970	10.9	51.3	64.2	70.8
1981	9.7	24.3	69.1	76.7
1991	10.6	10.8	70.4	77.4
1995	10.8	6.9	71.6	78.6
2001	10.2	5.0	73.5	80.3
2002	10.2	4.9	73.7	80.6
2005	10.2	3.5	74.9	81.4

Source: Rodrigues, Teresa Ferreira, Moreira, Maria João Guardado. Mortality Pattern in Portugal

Figure 1

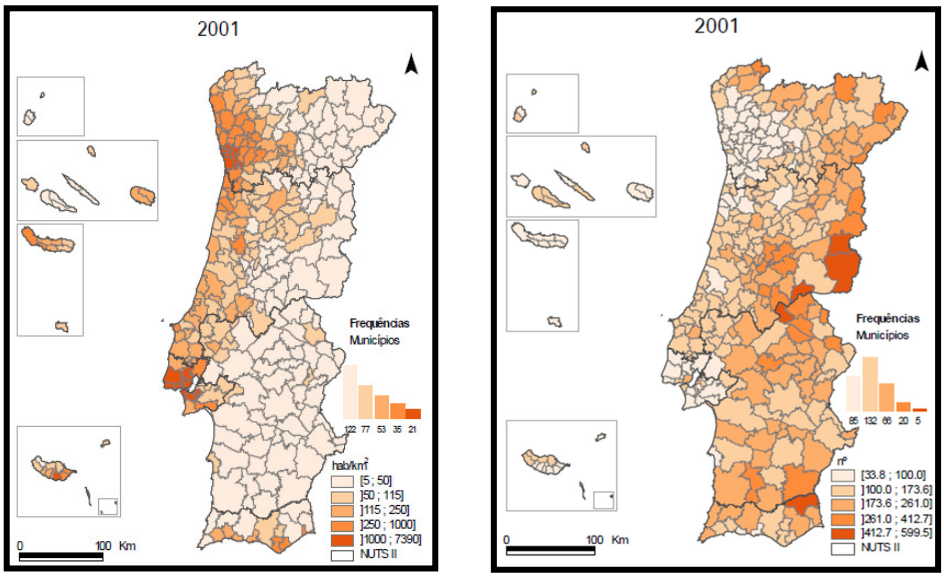


Drawing by the author. Source: United Nations

During the final quarter of the 20th century, Portugal lived important social and political changes, which altered collective way of life and the concept of life quality, creating social transformations in traditional family structures, in social needs, in objectives and in life expectations. One of the most major changes occurred on instruction levels and health equity which ones implemented transformations such as better health to general population and discontentment in rural young population related to labor expectations in urban areas. In addition we have also the temporary mobility phenomenon of student population, some of which becomes permanent migration.

Summarizing: at the end of the 20th century Portugal was a country in clear ageing process, mainly in rural areas; rural exodus of young people to coastal major cities was an unavoidable fact, as we can see in maps 1 and 2.

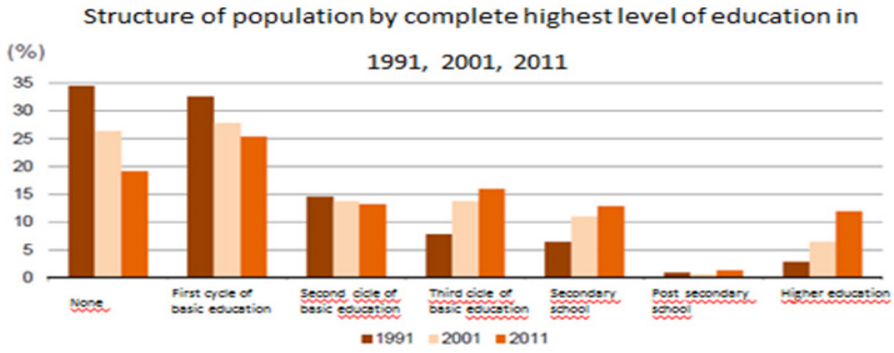
Map 1: Population density, Portugal 2001 **Map 2: Index of ageing, 2001**



Source Map1 and Map 2: National Statistics Institute

As shown in the figure 2, Portuguese population educational level increased during the 20th century and keeps increasing until 2011. Older people present low levels of education and most of them live isolated in rural areas.

Figure 2



Source: Adapted from INE

In what concerns Portuguese health policies one should emphasize that during the century the importance given to that sector becomes step by step more important.

In 1899 the organization of public health system was initiated, in order to assure assistance to most vulnerable population, being the remaining population served by the

private services. But the health and sanitary situation remains deficient. For that reason in 1945 a sanitary reform was initiated, stimulated by the recognized deficit of Portuguese sanitary situation and the necessity of a coordinated reply from the State, and in this context in 1946 took place the organization of the existing health services, initiating the concept of hospital net work. Most central and regional hospitals were then built.

The development of health services network and the concern with population's health provoked changes of specific custody necessity perceptions. In 1958 was created the Ministry of Assistance and Health, and in 1973 the Ministry of Health became autonomous. Portuguese Republic Constitution of 1976 consecrated to all the citizens the right to health protection and the State duty of defending and promote population health. Accordingly in 1979, National Health Service (NHS) was created, guaranteeing health access to all citizens, independently of their economic and social condition. The NHS involves all the integrated cares of health, the promotion and monitoring of the health, the prevention of the illness, the diagnosis and treatment of the sick people and the medical and social rehabilitation. In this context the country were served with proximity and central health services assuring the population health. This objective was reached and the life expectancy increases, the infant mortality rate diminishes and all the indicators of well-being and quality of life start to increase, as demonstrated in table1 and figure 1.

In 1988 was approved by the State the hospital law management and health expenditures in national budget increased. In the same year, methods of enterprise management were introduced in health services. In 1990 the Health Law was approved. It considered that healthcare should be given by State services and establishments or by private entities with no lucrative ends under their supervision. In 1992 was established the regime of taxes for accessing health services and its exemptions.

Since then many initiatives have been developed having primordially as support the sustainability and the quality of the NHS. During this process, financial sustainability of the NHS becomes worse, consequently started a reorganization of health services and subsequent closure of some local services. In 2005 these measures were implemented through the Program for Restructuring the State's Central Administration (see table 2).

Table 2: Evolution of Health Services. Portugal, NUTS III. 2002 / 2006

Portugal NUTS III	Public Hospitals (No.) by Geographic Localization; Annual					Health Centers (No.) by Geographic Localization; Annual					Extensions of the Health Centers (No.) by Geographic Localization, Annual				
	2006	2005	2004	2003	2002	2006	2005	2004	2003	2002	2006	2005	2004	2003	2002
Minho-Lima	1	1	1	1	2	12	12	12	13	13	25	25	27	28	34
Cávado	2	2	2	2	2	6	6	6	9	9	41	41	41	41	42
Ave	4	4	4	4	4	10	10	10	11	11	36	35	33	38	40
Grande Porto	17	16	16	16	16	26	27	25	35	34	84	77	77	66	60
Tâmega	2	2	2	2	2	15	15	15	17	17	65	65	65	65	65
Entre Douro e Vouga	3	3	3	3	3	5	5	5	5	5	42	43	43	42	42
Douro	2	2	2	2	2	20	20	20	20	20	61	57	61	67	62
Alto Trás-os-Montes	2	4	4	4	4	15	15	15	15	15	83	96	96	97	100
Baixo Vouga	5	5	5	5	5	12	12	12	12	12	90	90	90	86	86
Baixo Mondego	12	13	15	12	14	13	13	13	13	13	82	85	88	89	89
Pinhal Litoral	2	2	2	2	2	6	6	6	6	6	64	66	66	62	65
Pinhal Interior Norte	0	0	0	0	0	14	14	14	14	14	77	82	82	88	89
Dão-Lafões	2	2	2	2	2	17	17	17	17	17	48	48	48	48	48
Pinhal Interior Sul	0	0	0	0	0	5	5	5	5	5	37	37	36	36	39
Serra da Estrela	1	1	1	1	1	3	3	3	3	3	29	29	29	29	29
Beira Interior Norte	1	1	1	1	1	9	9	9	9	9	50	50	50	50	50
Beira Interior Sul	1	1	1	1	1	4	4	4	4	4	52	52	52	52	52
Cova da Beira	1	1	1	1	1	3	3	3	3	3	55	55	55	55	55
Oeste	4	4	4	4	4	12	12	12	12	12	74	78	77	77	76
Médio Tejo	2	2	2	2	4	11	11	11	11	11	96	95	97	98	98
Grande Lisboa	25	27	28	28	28	38	38	38	38	38	107	108	111	112	111
Península de Setúbal	4	5	5	5	5	16	16	16	16	16	60	60	60	65	62
Alentejo Litoral	1	1	1	1	1	5	5	5	5	5	44	44	44	44	43
Alto Alentejo	2	2	2	2	2	16	16	16	16	16	76	76	76	76	69
Alentejo Central	2	2	2	2	2	14	14	14	14	14	85	85	85	85	85
Baixo Alentejo	1	1	2	2	2	13	13	13	13	13	70	70	70	70	71
Lezíria do Tejo	1	1	1	1	1	11	11	11	11	11	73	72	72	72	72
Algarve	3	3	4	4	4	16	16	16	16	16	68	68	68	68	68
Região Autónoma dos Açores	3	3	3	3	3	17	17	17	17	17	103	105	105	105	102
Região Autónoma da Madeira	1	1	1	1	1	14	14	14	13	12	39	36	36	36	37

Drawing by the author. Source INE

According to the demographic alterations observed during the 20th century and the politics concerns, in 2006 the National Network of Integrated Continued Care was implemented in order to respond to the progressive ageing of the population, increased life expectancy and the increasing prevalence of persons with chronic disabling diseases. The distribution of these services is presented in map 3.

Map 3: Network of Integrated Continued Care. Portugal

Source: National Network of Integrated Continued Care

As global conclusions we can say that demographic change transformed population health profile. Pathologies related to biological ageing increased (such as degenerative diseases and those related to decrease in motor function). The new elderly populations currently have less family support, due to rural exodus of young people. Still the low education level average of elderly lead to a situation of increased difficulty of managing health support.

Health and well being policies have been adapted to demographic and social changes, particularly due to increasing life expectancies and the consequent growth of population over 65 years. However because of, State economic restrictions and consequent budgetary constraints, health began to be subjected to fees and health services have been restructured, closing proximity services, although preserving the quality of new services offer. Changes departed large percentage of elderly people from health services, most of them with few economic resources, poor education and difficulty in getting timely responses to their health problems. Nevertheless, future elderly population, who will have higher levels of education, will have more facilities in managing their health process.