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Original Research

The economic impact of early retirement attributed to rheumatic diseases: results from a nationwide population-based epidemiologic study

P.A. Laires [a,b,c,*], M. Gouveia [d], H. Canhão [c,e], J.C. Branco [c,e,f]

[a] Faculdade de Medicina da Universidade de Lisboa, Lisbon Academic Medical Center, Lisbon, Portugal
[b] Centro de Investigação em Saúde Pública, Escola Nacional de Saúde Pública, Lisbon, Portugal
[c] EpiReumaPt Study Group – Sociedade Portuguesa de Reumatologia, Lisbon, Portugal
[d] Catolica Lisbon School of Business and Economics, Lisbon, Portugal
[e] Chronic Diseases Research Center (CEDOC), NOVA Medical School, Universidade Nova de Lisboa (NMS/UNL), Lisboa, Portugal
[f] Rheumatology Department, Hospital Egas Moniz – Centro Hospitalar Lisboa Ocidental (CHLO-E.P.E.), Lisbon, Portugal

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ABSTRACT

Objectives: To measure early retirement due to self-reported rheumatic diseases (RDs) and to estimate the respective indirect costs and years of working life lost (YWLL).
Methods: We used individual level data from the national, cross-sectional, population-based EpiReumaPt study (September 2011–December 2013) where 10,661 inhabitants were randomly surveyed in order to capture and characterize all cases of RD within a representative sample of the Portuguese population. In this analysis, we used all participants aged between 50 and 64 years, near the official retirement age. A national database was used to calculate productivity values by gender, age and region, using the human capital approach. YWLL were estimated as the difference between each participant's current age and the respective retirement age, while the potential years of working life lost (PYWLL) were given by the difference between official and actual retirement ages. We also calculated the percentage of time in inactivity (inactivity ratio = YWLL/Active age-range [15–64 years old]).
Results: 29.9% of the Portuguese population with ages between 50 and 64 years were retired with 13.1% self-reporting retirement due to RD. The estimated annual indirect cost following premature retirement attributed to RD was €910 million (€555 per capita; €1625 per self-reported RD patient and €13,592 per early retiree due to RD). Females contributed with 84% for these costs (€766 million; €882 per capita vs €187 from males). We observed a

* *Corresponding author*. Sociedade Portuguesa de Reumatologia, Av. de Berlim, 33 B, 1800-033, Lisbon, Portugal.
E-mail address: laires.pedro@gmail.com (P.A. Laires).
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total number of 389,939 accumulated YWLL (228 per 1000 inhabitants) and 684,960 PYWLL (401 per 1000 inhabitants). The mean YWLL and PYWLL inactivity ratios were 12% and 21%, respectively. RD patients with higher values of disability have the highest risk of early retirement.

Conclusions: Early retirement attributed to self-reported RD amounts to approximately 0.5% of the national gross domestic product (GDP) in 2013, due to large YWLL. Both the public health concern and the economic impact highlight the need to prioritize investments in health and social protection policies targeting patients with rheumatic conditions.

Introduction

Early retirement generates a serious problem for social and economic sustainability in developed countries where, in recent decades, there has been a substantial rise in the percentage of the labour force out of work because of sickness or disability and in the related social protection benefits.[1,2] The combination of an ageing population and widespread early retirement puts severe strains on our social security systems' capacity to maintain today's standard of living for future generations of older people. In particular, Portugal is already among the oldest countries in the world, with one of the highest old-age dependency ratios, and it is in the forefront of this general concern regarding premature work withdrawal.[2] Early retirement is influenced by several factors, including progressively prevalent chronic pathologies, such as rheumatic diseases (RD).[3–15,40] RD are among the most common chronic non-communicable diseases. They are the leading cause of work disability in developed countries and consume a large amount of health and social resources,[16–18] where over a third of the population approaching the statutory retirement age suffers from some type of RD.[19–21] This situation is expected to deteriorate in the coming future, and therefore, RD is expected to cause growing productivity losses (indirect costs), in particular by premature departures from the labour market. Thus, better knowledge about the relationship between RD, its functional limitations and the ability to work is fundamental to prevent early retirement. Moreover, measurement of current indirect costs of RD may raise awareness on public opinion and decision makers, ultimately triggering needed action.

Previous research has measured this sort of indirect costs, but mostly addressed specific rheumatic conditions or used data from broad non-specific surveys.[4,5,12,22–27] Given the importance and the aforementioned impact of this topic, it is also relevant to explore it with RD-specific information, namely disability data and direct subjects' reports on the occupational impact caused by these diseases as a whole.

Thus, the main aim of this study is to measure early retirement attributed to self-reported RD, the respective indirect costs and years of working life lost, based on a nationwide RD-specific survey, which directly addressed the occupational impact due to these health conditions.

Methods

Sample

This study uses the first national, cross-sectional, population-based study on RD in all regions of Portugal – EpiReumaPt study. The methodology of EpiReumaPt has been detailed elsewhere.[28] Briefly, EpiReumaPt (September 2011–December 2013) randomly selected 10,661 adult subjects through a stratified multistage sampling by Portuguese regions (European NUTS II level) and by size of location. Participant households were selected by the random route methodology. Face-to-face interviews inquired participants about socio-demographic data, socio-economic profile (measures of wealth, household income, current professional status), life style (e.g. alcohol and coffee intake), anthropometric data (weight and height), quality of life (European Quality of Life questionnaire with five dimensions and three levels validated for Portugal, EQ-5D index[29,30]) functional capacity (Health Assessment Questionnaire, HAQ[31]), and self-reported chronic non-communicable diseases, including RD. Additionally, EpiReumaPt has data on the economic impact of RD, such as healthcare consumption (number and type of medical appointments, hospitalizations, homecare assistance and other healthcare service's needs, in the previous 12 months), early retirement, disability pensions and other forms of premature withdrawal from work.

For the purposes of this analysis, we used data from the first phase of EpiReumaPt for all participants from Portugal mainland aged between 50 and 64 years old near the official retirement age of 65 years (1065 men and 1727 women). The sample was considered representative of the Portuguese population.[28,32]

Measurements

For this analysis, we considered the presence of RD through self-reporting. The same applies for the following major chronic diseases: diabetes, cardiovascular disease (including risk factors such as hypertension and high cholesterol), allergy, pulmonary disease, gastrointestinal disease, neurological disease, mental disease and cancer. A proxy measure of general morbidity was built as the sum score of all aforementioned chronic illnesses (comorbidity score). Obesity was measured according to the body mass index (underweight: $<18.5\ m^2/kg$, normal: $18.5–25\ m^2/kg$, overweight: $25–30\ m^2/kg$,