COST OF EARLY RETIREMENT CAUSED BY RHEUMATIC DISEASES IN PORTUGAL

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INTRODUCTION

- Rheumatic diseases (RD) cause physical disability that may lead to early retirement, generating high indirect costs to society.
- We aim to estimate indirect costs of early retirement caused by RD in Portugal.

METHODS

- We used individual level data from the national, cross-sectional, population-based EpiReumaPt study (Sep 2011-Dec 2013).
- 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 65 years old (yo), near the official retirement age.
- An official national database was used to calculate productivity values by gender, age and region, using the human capital approach. All results were based on weighted data.

RESULTS

- 29.9% of the Portuguese population with ages between 50 and 64 yo were officially retired.
- Among these, 13.1% were retired due to RD (3.9% of overall population).
- The estimated annual indirect cost following premature retirement caused by RD was €910 million (€555 per capita; €1,625 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 versus €187 from males).
- The mean retirement age for early retirees due to RD was 54.8 yo.
- Thus, we estimate an average indirect cost of €138,635 per early retiree due to RD until official retirement age (assuming 65 yo and fixed annual productivity values).

### Self-Reported Rates of Early Retirement by Gender and Presence of Rheumatic Diseases

<table>
<thead>
<tr>
<th>RHEUMATIC DISEASES</th>
<th>GENDER</th>
<th>EARLY RETIREMENT</th>
<th>EARLY RETIREMENT CAUSED BY RD</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>Male</td>
<td>36.4%</td>
<td>4.3%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>34.7%</td>
<td>11.9%</td>
</tr>
<tr>
<td></td>
<td>M+F</td>
<td>35.2%</td>
<td>9.7%</td>
</tr>
<tr>
<td>NO</td>
<td>Male</td>
<td>33.3%</td>
<td>0.8%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>19.3%</td>
<td>1.0%</td>
</tr>
<tr>
<td></td>
<td>M+F</td>
<td>27.2%</td>
<td>0.9%</td>
</tr>
<tr>
<td>ALL</td>
<td>Male</td>
<td>33.9%</td>
<td>1.5%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>26.4%</td>
<td>6.0%</td>
</tr>
<tr>
<td></td>
<td>M+F</td>
<td>29.9%</td>
<td>3.9%</td>
</tr>
</tbody>
</table>

Prevalences of early retirement were computed as weighted proportions, in order to keep into account the sampling design of the EpiReumaPt study (N = 1,706,749).

RESULTS II

- Moreover, RD may underlie early retirement even when RD is not self-reported to be its cause, since we also found an independent association between all registered early retirement and self-reported RD (adjusted OR: 1.41; CI: 1.03-1.95; p<0.031), meaning that RD might further contribute for this sort of indirect costs.

### Annual Estimated Early Retirement Indirect Costs due to Rheumatic Diseases in Portugal, by Gender

Cost per capita

### Annual Estimated Early Retirement Indirect Costs per capita due to Rheumatic Diseases in Portugal, by Gender

Cost per RD patient

CONCLUSIONS

- Annual early retirement indirect costs due to RD are considerable, particularly in females.
- Early retirement caused by RD amounts to approximately 0.5% of the national GDP 2013.
- 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.