Ageing (un)equally and (un)healthily: On the health status of Portuguese people aged 50+

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Abstract:
Research on the health status and on socio-economic inequality in the health status of Portuguese adults with 50 years of age or more is scarce, but urgent, so that policy-makers can better understand the type of burdens that this ageing process will place on social welfare policies. We use data from the Survey of Health Ageing and Retirement in Europe Wave 6 to investigate the role of gender, income and

education in self-reported health status and in morbidity amongst adults aged 50+ in Portugal by means of a multivariate analysis. Results from this exploratory study reveal a negative self-perception of health status amongst older individuals; high prevalence of chronic diseases since an earlier age; high levels of depression problems reported by women; and high disability amongst the oldest old. The results also show a prevalence of chronic diseases, mental health problems, and high disability, which will challenge the Portuguese social welfare system in terms of long-term care and pensions, and will additionally require an adequate (re) organization of the healthcare supply to older adults. Furthermore, the evidence calls for a gendered perspective of health and social policy in Portugal, particularly concerning mental health.

What is known about this topic

The complexity of health problems raised by ageing is increasing, but the existing evidence is dated.

High socio-economic-related health inequality in Portugal persists at older ages.

Women are more likely to experience poorer health than men, in Portugal.

What the article adds

Recent evidence is analysed to identify patterns of unequal ageing in Portugal to allow policy-makers to better target healthcare.

Older people experience lower and rapid deterioration of their health stock and there are clear gender differences on individuals' self-perceived health status.

Women report worse self-perceived health status than men, with noteworthy mental health deficiencies, that will need to be adequately targeted by healthcare policies.

1. Introduction

Portugal has one of the fastest ageing populations in the European Union (Eurostat 2021b). The median age of the population increased by 4.4 years between 2008 and 2018 (which was the highest increase in the EU), while the share of the population aged 65 years or over (henceforth 65+) increased by 3.9 percentage points in the same period (the fifth highest rate in the European Union). In 2017, Portugal was the EU country with the third highest share of population aged 65+ (21.5%, contrasting with the EU average of 19.7%) and the third country with highest median population age in European Union (44.8 years versus 43.1 years) (Eurostat 2021a; INE 2019). These trends in the Portuguese population are a result of a combination of a very low fertility rate, higher life expectancy and high rate of emigration (Bloom 2013). Demographic projections anticipate that 1/3 of the Portuguese population will be 65+ by 2045, and the dependency ratio (people aged 65+ relative to those aged 15–64) is expected to be 83% compared to 52% in 2013. Another important trend is the increase in the share of individuals aged 80 or over (henceforth 80+). These so-called 'oldest old' represented about 27.7% of the population aged 65+ in 2013 and are expected to be about 35.4% by 2045 (European Commission 2015). The economic and social stakes of these demographic trends will greatly depend on how individuals age, and on how the health system tackles the changing health demand conditions.

The population structure and ageing are important topics both in the academic research and in the public policy agendas. The main reason is that a higher dependency ratio means fewer contributors to the social security and public health systems, which can create a financial challenge and, ultimately, defy the survival of the current systems (Moreira et al. 2019). However, the impact of population ageing directly on the health care costs is not consensual (Gregersen 2014; Payne et al. 2007; Zweifel et al. 1999). The predictions of rapid growth in health care expenditures based on the ageing rates are still not evident in the health expenditure data, mainly because the link between ageing and health expenditure growth is complex (Pita Barros 1988; Rechel et al. 2013). The discussion is mostly centred on whether higher life expectancy leads to a compression or to an expansion of morbidity. Existing evidence on this matter is conflicting. While disability amongst older adults has been decreasing over time, the prevalence of chronic diseases as well as the complexity of health problems increased (Lindgren 2016; Chatterji et al. 2015; Christensen et al. 2009; Rechel et al. 2013).

Furthermore, ageing is not a homogenous social phenomenon, and varies by gender and social conditions, thus placing different burdens on the health and social welfare systems. Gender and socio-economic inequality among older adults are well documented in developed countries, in general (Arber and Ginn 1993; Huisman et al. 2004; Rueda et al. 2008; European Commission 2014; Kok et al. 2016; Read et al. 2016). Inequality does not follow a uniform trajectory, instead it varies across different health dimensions, and tends to narrow at older ages due to 'survival selection' (Arber and Ginn 1993; Huisman et al. 2004; Read et al. 2016; Schmitz and Lazarevič 2020).

Cross-sectional evidence shows that Portuguese older adults report declining subjective health and a high level of disability (Jagger et al. 2008; Bandeira et al. 2014; Serrano-Alarcón and Perelman 2017). There is also evidence of gender-related health inequality: despite having longer life expectancy, women are more likely to experience poorer health outcomes than men (Fernandes 2007; Perelman et al. 2012; Bandeira et al. 2014; Eurostat 2021b; Fernandes and Burnay 2019). Less educated are also more likely to report lower levels of health (Cabral et al. 2013; Fernandes 2007). Furthermore, empirical evidence suggests that high socio-economic-related health inequality in Portugal persists at older ages (Van Doorslaer and Koolman 2004; Mackenbach et al. 2008; Perelman et al. 2012 Bandeira et al. 2014; Silva 2014; Matos et al. 2016).

Despite the relevance of the theme for social policy design purposes, evidence for Portugal is scarce and, overall, dated, thus it is urgent to adequately plan for impacts in costs with pensions, disability benefits, long-term care and health expenses.

The purpose of this article is twofold. Firstly, we present an overview of the health status of Portuguese adults aged 50+. Secondly, we explore the variation in self-reported health status across age groups, gender and socioeconomic status. This analysis allows public policy on ageing to be evidence based and to acknowledge the identified inequalities. A causal analysis on health and on health inequality is beyond the scope of this study, furthermore age effects cannot be distinguished from cohort effects in our cross-sectional analysis. This should be born in mind while interpreting our age results. Yet, the identification of health status patterns (and inequalities) of an ageing population is an essential step to advise public policy on the healthcare needs of the population aged 50+.

Using data collected at the European level, we present a portrait of the health status of Portuguese adults aged 50+ and identify inequalities that

should be taken into consideration by policy-makers. Our study updates previous evidence on ageing in Portugal. Bandeira et al. (2014) cover six decades to 2011, Fernandes and Burnay (2019) focus on cross-sectional data from 2005 to 2006, using a multidimensional approach to the study of ageing. Our results suggest that, despite the improvement on life expectancy, more needs to be done to foster healthy ageing in Portugal. Older people experience lower and rapid deterioration of their health stock and there are clear gender differences on individuals' self-perceived health status. Therefore, our results call for a public policy agenda that acknowledges gender and socio-economic inequalities to target the most vulnerable individuals more efficiently.

2. Methods

2.1. Data

We use data from the Survey of Health Ageing and Retirement in Europe (SHARE) Wave 6, as of 31 March 2017 (https://doi.org/10.6103/SHARE. w6.600) (Börsch-Supan 2019). The SHARE data set provides comprehensive cross-sectional information about people's health and socio-economic status. Based on probability samples in participating countries, SHARE represents the non-institutionalized population aged 50+. The methodological aspects are discussed in Börsch-Supan et al. (2013) and Malter and Börsch-Supan (2015).

In Wave 6, there were 1644 participants in Portugal (Börsch-Supan et al. 2019). While Portugal has been included in the data collection in Wave 4 – 2011, the too short temporal range would not allow us to capture significant changes in health inequalities, in particular given that the longitudinal sample is not a balanced panel. Additionally, Wave 7 – 2018/2019 included Portugal, but issues related to the fieldwork collection implied that the data publicly available does not include the full sample for Portugal (SHARE 2019) – the short temporal range would not allow us to capture significant changes in health inequalities, in particular given that the longitudinal sample is not a balanced panel.

2.2. Health outcome variables

Health is a multidimensional concept encompassing, amongst other aspects, self-assessed well-being and health status, absence or presence of disease, functional status (e.g. mental health, cognitive status and sensory status) and disability. The SHARE data set contains an array of variables to cover these different health dimensions. We focus on the following SHARE variables, which are then adapted for the present study.

1. Self-perceived health (US scale) (SPHUS): SPHUS is a subjective and comprehensive measure of health, which is widely used in the literature. Individuals are asked to classify their health status using an ordered scale ranging from 'excellent' (1) to 'poor' (5). By collapsing responses, we are able to construct a dichotomous indicator ('lower than good') that takes the value of 1 if the self-perceived health is reported as below 'good' (including 'poor' or 'fair') and 0 otherwise (including 'good' or 'excellent').

2. Number of chronic diseases: participants are asked whether a doctor has diagnosed them with any of the following conditions: hypertension, diabetes, cancer, lung disease, heart disease, stroke and arthritis. Adults with two or more chronic diseases are especially vulnerable to adverse outcomes (Van den Akker et al. 1998; Fortin et al. 2005), therefore we

created a dummy variable (2+ chronic) that takes the value of 1 for those diagnosed with two or more chronic diseases, and 0 otherwise.

3. Mental health status: mental health is assessed by using a self-reported twelve-item EURO-D scale. We dichotomize the EURO-D scale information, and create a variable (Depression) that takes the value of 1 if EURO-D score is 4 or greater, and 0 otherwise as in Prince et al. (1999).

4. Prevalence of disability: disability is identified from the Activities of Daily Living (ADL) scale. Our derived dummy variable (Disability) takes the value of 1 if the individual reports at least one limitation of daily living, as it represents an indicator of the difficulty to live independently, and 0 otherwise (Jacobzone et al. 1999).

Figure 1 characterizes the distribution of the ordinal/nominal health variables among individuals aged 50+. Only 3.3% of the population aged 50+ report an 'excellent' general health status (Graph 1, Figure 1), and about 13% report five or more chronic diseases (Graph 2, Figure 1). Furthermore, 3.5% of the older individuals report limitation in all dimensions of ADL scale (Graph 3, Figure 1) and there is also a significant share of individuals reporting depressive problems as the mean EURO-D score is about 3.4 (Graph 4, Figure 1).

One-to-one correlations between the variables are presented in Table 1. Associations amongst the different strands of health status are statistically weak, illustrating the complexity of the health concept and measurement.
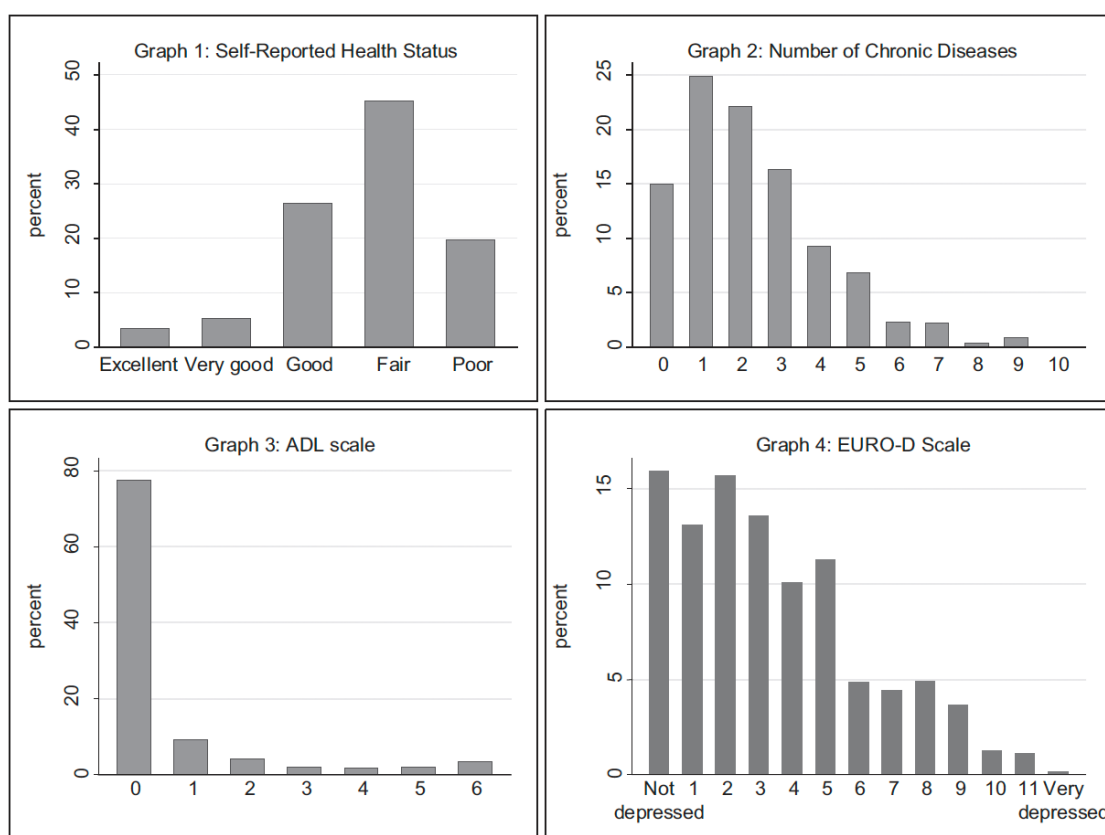
Figure 1: Health outcomes

Table 1: Correlation between health outcomes

	'lower than good' health	2+ chronic diseases	Depression	Disability
'lower than good' health	1.00			
2+ chronic diseases	0.371***	1.00		
Depression	0.283***	0.188***	1.00	
Disability	0.293***	0.211***	0.264***	1.00

Note: *** significant at 1%.

2.3. Socio-economic status variables

Socio-economic status is evaluated with two indicators:

1. Level of education: based on the International Standard Classification of Education (ISCED) (UNESCO 2006). ISCED Levels 0–2 (none, pre-primary, primary and lower secondary education) correspond to the variable ISCED1, Level 3 (upper secondary education) corresponds to the variable ISCED2 and Levels 4–6 (post-secondary education) correspond to the variable ISCED3.

2. Household adjusted net income: income is measured as disposable household income defined as the sum of the income of each individual member of the household (Thinc variable in SHARE database). In order to adjust for the household size, the value of income was divided by the square root of the number of persons in the household (Kunst et al. 2001). For further analyses, we have split the adjusted per-capita income into quartiles, creating four different dichotomous variables (Income1–Income4). There is likely a relation between education and income such that those who are better educated will also be able to have higher income. Nonetheless, the estimated correlation coefficient suggests that the relation is weak (0.29, $p < 0.05$).

There is no chronological age for ageing, but most developed countries have accepted for statistical purposes 65 years and over (65+) as a definition of older adults, and more than 80 years old (80+) for oldest old. We follow that convention to determine the number and the boundaries of the age groups considered in the analysis, which will focus on the population aged 50+.

2.4. Considerations about the statistical methods

Our first approach is essentially descriptive, reporting the descriptive analysis of data. Kruskal–Wallis tests (Kruskal and Wallis 1952) are used to examine the statistical significance of differences between groups. We then proceed with multivariate relationships between gender and socio-economic variables on self-reported health status of the 50+.

To deal with the non-response problem, SHARE provides five different data sets (each corresponding to one of the five imputed values for each missing value). Therefore, when making inference and descriptive analysis, whenever possible we use the five independent imputations of the missing values, in order to obtain the coefficients and standard errors by multiple imputation (Little and Rubin 2002). The model is estimated using mi commands provided by Stata® (StataCorp 2013a).

The descriptive statistics reported are computed using the individual weights in the database. We report and discuss only the unweighted multivariable regression results (Solon et al. 2015).

3. Results

3.1. Old, poor and uneducated

Panel A of Table 2 shows descriptive statistics on the socio-demographic profile of Portuguese people aged 50+ (SHARE, Wave 6 collected in 2017).

Table 2: Descriptive statistics

Variable	Mean/percentage (SD)
Panel A: Socio-economic variables	
Age	67.4 (0.53)
Age group	
50–64	46%
65–79	38%
80+	15%
Men	44%
Employed	16%
Education (baseline: ISCED1)	
Upper secondary (ISCED2)	7%
Post-secondary (ISCED3)	31%
Married/civil partnership	75%
Adjusted per-capita income (Baseline: Income1)	
2nd quartile (Income2)	33%
3th quartile (Income3)	19%
4th quartile (Income4)	3%
Panel B: Health outcome variables	
All observations	
'lower than good' health	65%
2+ chronic diseases	60%
Depression	42%
Disability	23%
No. of observations	1660
Ages 50–64	
'lower than good' health	25%
2+ chronic diseases	44%
Depression	33%
No. of observations	198

(*Continued*)

Variable	Mean/percentage (SD)
Severe disability	15%
No. of observations	647
Ages 65–79	
'lower than good' health	70%
2+ chronic diseases	73%
Depression	42%
Disability	19%
No. of observations	815
Ages 80+	
Poor or fair health	88%
2+ chronic diseases	76%
Depression	67%
Disability	57%
No. of observations	198

More than half of the observations relate to women (55.6%) and the average age is 67.4 years. About 75% are married or are in a civil partnership. There is a significant presence of low-income people, 45% have an adjusted per-capita income in the lowest quartile of the distribution, and 78% have below median adjusted per-capita income (the mean annual household net income is €13,000, which is lower than national mean as reported by INE [2017]).

The majority of individuals in this age group have 'lower secondary education or less' (62% in the group ISCED1). It can also be shown that women are overrepresented among the lowest educational and income levels. Oldest old (80+) are more concentrated on the lowest level of education. On other hand, the youngest group has the lowest average household adjusted income.

3.2. Ageing unhealthily

Panel B of Table 2 presents descriptive statistics on the health status of people aged 50+, stratified by age groups (for non-institutionalized individuals).

Self-report of physical and mental health problems is common amongst people aged 50+. Almost 65% of the individuals rate their health as 'lower than good' and 60% of the respondents report two or more diagnosed chronic diseases. More than one in five (23%) individuals report disability, while clinical depression affects approximately 42% of adults aged 50+.

Unsurprisingly, the deterioration of health, morbidity and disability show a steep age-gradient as the oldest individuals accumulate, on average, more health problems. The older the age group the higher the fraction of individuals self-reporting 'lower than good' health status, e.g., 88% of the individuals aged 80+ reported 'lower than good' health status. Chronic diseases, on the other hand, are diagnosed relatively early in life: 76% of the individuals aged 50–64- year report suffering from at least of one chronic illness, and 44% report suffering from two or more. The percentage of people who report at least two chronic diseases increases to 77% amongst the 'oldest old'. Disability is also strongly

associated with age, but rapid deterioration seems to start later in life. The majority of the 'oldest old' suffer from disability (57%), which contrasts with 18.5% among the individuals aged 65–80 years. The prevalence of clinical depression increases across age groups, suggesting that mental health, measured by depression symptoms, deteriorates as individuals become older. While 33% of individuals between 50 and 64 years old seem to suffer from clinical depression, the prevalence of clinical depression is above 67% amongst the 'oldest old'.

Graphs 5, 6, 7 and 8 (Figure 2) characterize the distribution of health variables by gender and age groups. The prevalence of poor health outcomes is significantly higher amongst women. Women also appear to experience, on average, earlier decline in the health status during the ageing process. The most striking result is, probably, the excess of clinical depression amongst women relative to men; 55% report EURO-D level consistent with clinical depression, almost 30 percentage points higher than reported rates for men (Graph 8, Figure 2). Moreover, the gap appears to increase with age, 67% women 80+ report suffering from depression, which contrasts with 42% of men in the same age group.

Kruskal–Wallis test statistics reveal statistically significant differences by gender, as well as by age groups in health outcomes ($p < 0.05$). (Detailed statistics can be shown upon request.)

Graphs in Figures 3 and 4 plot the distribution of educational attainment and income level by health variable. The results suggest higher prevalence of health problems amongst the lower educated. Similarly, there is higher prevalence of health problems amongst those on the lower half of income distribution.

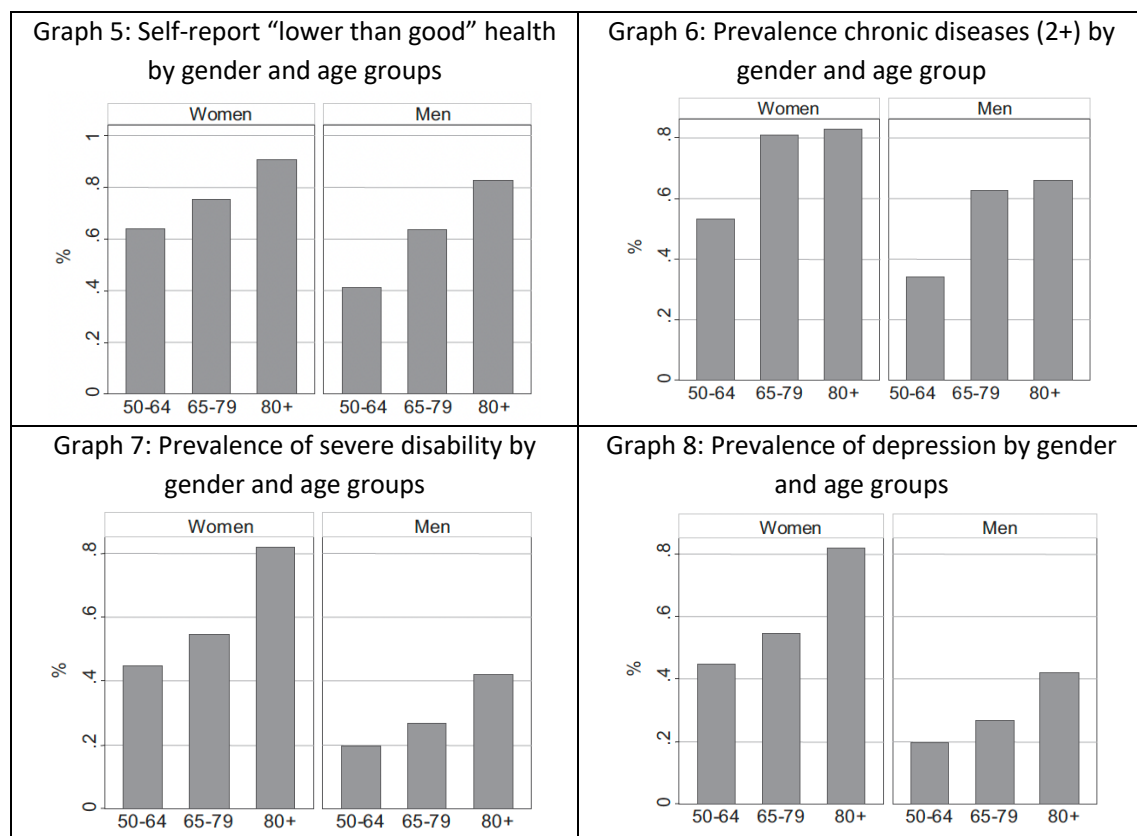Figure 2: Health outcomes, by age groups and gender

Graph 5: Self-report "lower than good" health by gender and age groups

Graph 6: Prevalence chronic diseases (2+) by gender and age group

Graph 7: Prevalence of severe disability by gender and age groups

Graph 8: Prevalence of depression by gender and age groups

Figure 3: Health outcomes, by education level

Graph 9: Health status and chronic diseases by education level

Graph 10: Depression and disability by education level

Figure 4: Health outcomes, by income level

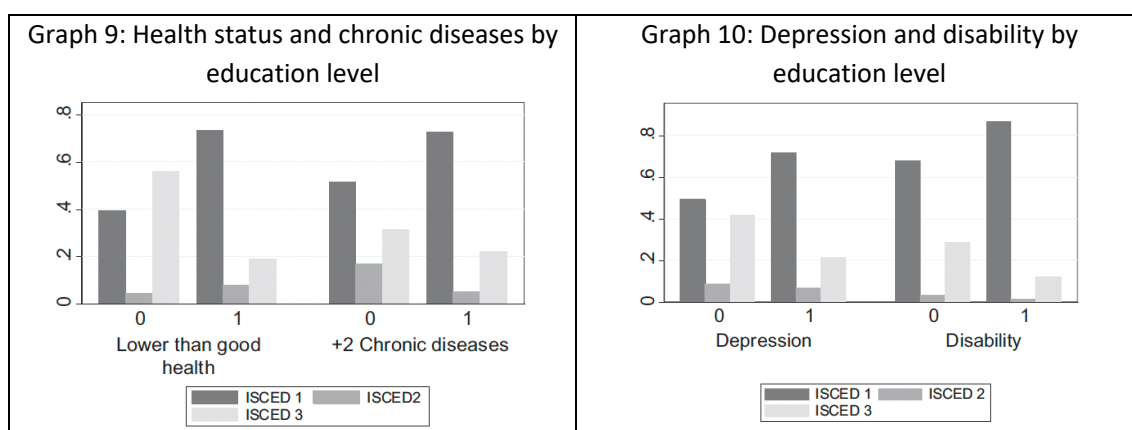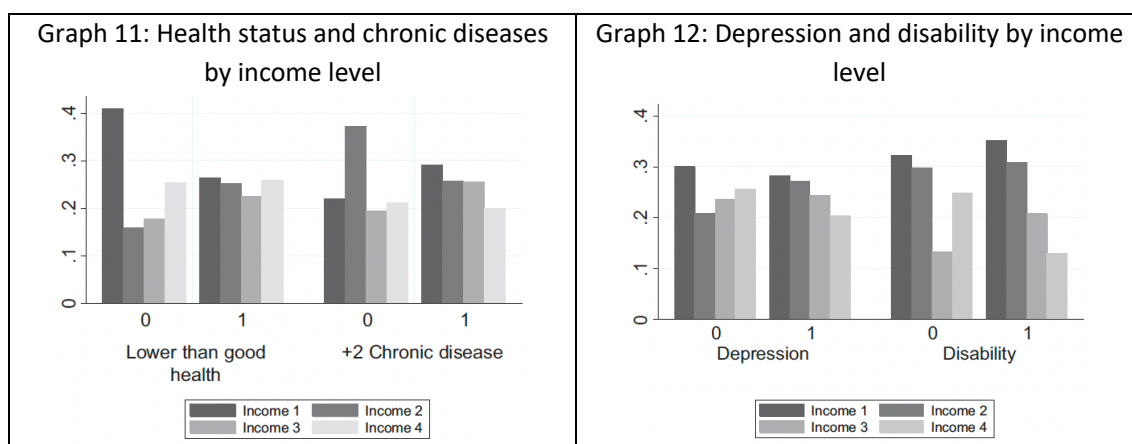Graph 11: Health status and chronic diseases by income level

Graph 12: Depression and disability by income level

3.3. Ageing unhealthily and unequally: Multivariate analysis

We estimate the probability of poor outcomes (binary health variables) by means of separate multivariate logistic regression models for the full set of the socio-economic variables, marital status and age group (Table 3). We also explore the differences between gender by estimating the logistic regressions separately by gender (Figure 5). Table 3 reports odds ratio estimates from the multivariate models, and Figure 5 plots the relevant odds ratio estimates for our analysis.

Despite differences between health measures, our results consistently suggest that health status of the Portuguese population aged 50+ are at least partially explained by their socio-economic status. Our results also confirm the importance of age and gender on self-reported health status. The socio-economic inequality is persistent across health measures. The differences amongst older adults by health status appear to be more consistently associated with respect to education levels (lowest versus higher) than with income levels.

The odds of perceiving a 'lower than good' health status are more than twice as high amongst the lowest educated older adults compared to their

Table 3: Odds ratio for health outcomes

	'lower than good'	2+ chronic diseases	Disability	Depression
Men	0.662***	0.602***	0.521***	0.344***
	(0.075)	(0.066)	(0.071)	(0.039)
Married	1.129	1.044	0.895	0.693***
	(0.169)	(0.150)	(0.142)	(0.097)
Education (baseline ISCED3)				
ISCED1	2.259***	1.546***	2.195***	2.041***
	(0.285)	(0.188)	(0.380)	(0.300)
ISCED2	1.202	0.985	1.036	1.430
	(0.264)	(0.216)	(0.358)	(0.354)
Income (baseline Income4)				
Income1	1.680***	1.509*	1.347	1.459*
	(0.296)	(0.306)	(0.276)	(0.317)
Income2	1.308	1.270	1.430*	1.451**
	(0.221)	(0.220)	(0.311)	(0.266)
Income3	1.398**	1.153	1.167	1.268
	(0.235)	(0.176)	(0.306)	(0.215)
Age group (baseline 80+)				
50–64	0.300***	0.470***	0.185***	0.476***
	(0.064)	(0.089)	(0.037)	(0.099)
65–79	0.611**	1.072	0.314***	0.598**
	(0.129)	(0.198)	(0.057)	(0.125)
Constant	2.260***	1.811***	0.553**	1.310
	(0.529)	(0.392)	(0.135)	(0.324)
Observations	1666	1666	1666	1666

Note: Standard errors in parentheses. Level of statistical significance *p < 0.1, **p < 0.05 and ***p < 0.01.

highest educated counterparts (odds ratio of 2.26). The protective effect of education is evident regardless of the health outcome. Lower educated people have higher risks of reporting poor health status, while the impact of upper secondary education is not statistically significant (these individuals seem to have health status similar to those with post-secondary education).

Overall, individuals in the highest income quartile are more likely to positively perceive their general health status than those in the bottom of the income distribution. Individuals in the lowest income quartile are, on average, 1.68 times more likely to self-report 'lower than good' health than those in the fourth quartile of income. This supports the hypothesis of income-related health inequality in self-assessed health status in Portugal, favouring the highest income group (as observed decades earlier in Van Doorslaer and Koolman [2004]). Our results also suggest a positive relation between income and the other health measures.
However, the statistical significance in those cases is generally weak.

Figure 5: Odds ratios by gender
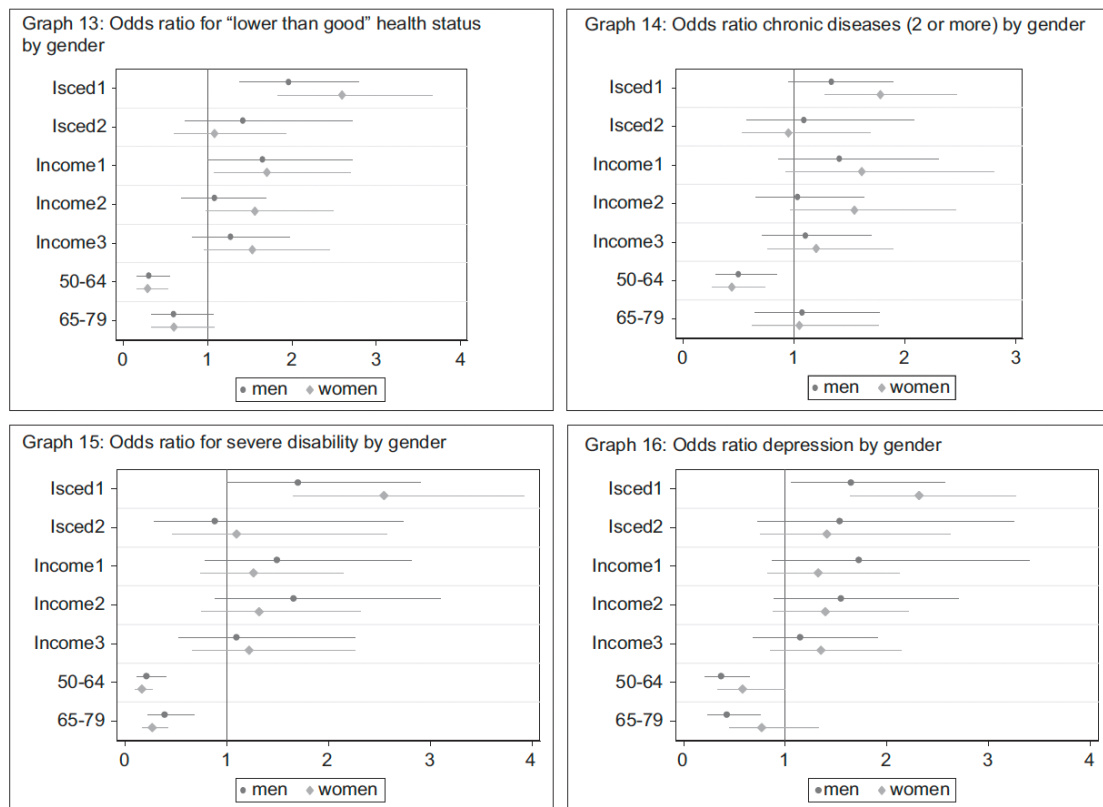
Results from the multivariate analysis confirm the exploratory analysis of the data. Regardless of how individuals' health is measured, there is strong evidence that women and older individuals are more likely to report poorer health status. Women are in particular much more likely to experience depression. Moreover, a stepwise regression analysis shows that adjusting for socio-economic variables does not significantly attenuate either gender or age groups' differences, as captured by the odds ratio (results can be provided upon request). Results suggest that the impact of gender and age on self-reported health is not mediated by differences in the socio-economic status. Regressions by gender (Graphs 13–16, Figure 5) indicate persistence of socio-economic inequality within gender groups. Results from pooled logistic models with interactions (results upon request) indicate that estimated odd ratios by gender are not statistical different, suggesting that after controlling for other socio-economic variables and based on cohort evidence, health deterioration across sex and age groups is, on average, similar (Mood 2000).

4. Conclusions

This study provides evidence on the health status and on the role of gender and socio-economic inequality in self-reported health and morbidity status amongst adults aged 50+ in Portugal. The extent of health depreciation that accompanies the ageing process in Portugal appears to be high. We acknowledge the different dimensions of the ageing process and thus focus on four

such dimensions. There are noteworthy results from this exploratory study:
(1) negative self-perception of health status amongst older individuals, (2) high prevalence of chronic diseases since an earlier age, (3) high levels of depression problems reported by women and (4) high disability amongst the oldest old. While these insights on the ageing process in Portugal are not new (e.g. Bandeira et al. 2014; Fernandes and Burnay 2019), our study updates the evidence by analysing data from the 2017 wave of SHARE, and goes further by exploring gender and income differences in the older population.

The substantial differences in health status between age groups suggest a potential for health gains in the future. Health projections also point to a future improvement in the health of older adults (Martins et al. 2014). We also observe wide gender inequality, which persists across age and socio-economic groups – this result is consistent with evidence found in previous studies (Perelman et al. 2012; European Commission 2015; Matos et al. 2016; Fernandes and Burnay 2019).

Mental health may be a relevant link in this association. The prevalence of depression amongst women is more than twice that of men. This result is consistent with evidence from other European countries (Buber and Engelhardt 2011; Hansen et al. 2017). Further research on the mediating role of mental health in health status is needed for conclusive results.

Overall, late life depression should be treated as an important public health problem, since it is associated with other devastating health, cognitive and social problems, self-neglect and increased mortality (Blaze 2003; Hansen et al. 2017). In the case of Portugal, it should be noted that a recent evaluation of the mental healthcare system pointed to several deficiencies in the integration with primary care and a lack of autonomous financing of mental health, as well as clear regional imbalances in terms of care (CNS 2009; CTARSM 2017). This current state of affairs means that there is an urgent need to prepare the mental health system for this particular pattern of ageing.

Our results also suggest education-related inequality in health amongst older people, in detriment of the least educated. The debate on the association between education and health is ongoing. There are several potential mechanisms through which education can affect health, such as better individual decision-making and information, healthier employment, more social capital and healthier behaviours (Contoyannis and Jones 2004; Silva 2014; Lochner 2011; Brunello et al. 2016; Read et al. 2016; Hoffmann et al. 2018). Understanding these mechanisms is relevant for health policy and should be the focus of future research. Nonetheless, the importance of educational attainment on health outcomes suggests that well-being at older ages depends on factors arising from the entire life history of individuals. Therefore, policies to address inequality should target individuals earlier in life. Public policies should prepare people for healthier ageing, including enhancing prevention, promotion of healthy lifestyles and encouragement for better self-care. Furthermore, all the more relevant is 'predicting and monitoring' transitions into older age (Deeg et al. 2018). As noted by Bandeira et al. (2014), these differences can also call for the construction of new health indicators.

It should, however, be noted that the estimated (so-called) age-gradient actually mixes age and cohort effects. Since age effects on health tend to be stronger than cohort effects (Mackenbach et al. 2008), we keep the terminology. That is nonetheless a limitation of the present analysis. However, analyses using longitudinal approaches are necessary and give room for future research. Moreover, given that self-reported health is inherently subjective and is not

perceived on an absolute scale (Bago d'Uva et al. 2008), and because of the exclusion of the institutionalized population from the database, inequality and steepness of the age-gradient are likely to have been underestimated.

The results are even more striking when set against the Portuguese health-care system, particularly because a vast majority of people aged 50+ have benefited from the public health system for at least half of their life. The Portuguese National Health System was created in 1979, but while it is slowly adjusting to an ageing population, the population has been ageing at a fast rate in the last decades. These results highlight the need for an adequate (re)organization of healthcare delivery that includes better coordination of care, expansion of long-term care and e-health, as well as improvements on management of multi-morbidity and mental health. The evidence presented clearly calls for a gendered perspective on health care policy in Portugal, particularly in mental health. More generally, the architecture of the social welfare system needs to be able to cope with the pressure for long-term care, as well as high prevalence of disability and mental health problems. Still, further research is needed to better understand the complex variations in health amongst the older, so that policy-makers can target social and healthcare investments more efficiently.

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