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Educational inequalities in extending working lives

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1 | General introduction

Implications of an ageing society

Life expectancy at age 60 has increased rapidly in the last decades from 18.0 years in 1970 to 23.4 years at present in the OECD and it is expected to rise to 27.9 years in 2050 ¹. Not only does the number of individuals aged 60+ substantially increase in size, the number of individuals of working age at the same time decreases due to the decrease in fertility rates following the baby boom. In addition, with the baby boom generation reaching retirement, large cohorts are now exiting the workforce. These demographic changes pose an economic strain on health and social care and pension systems in many European countries.

In response to this ageing of the population, pension systems have been reformed considerably in the last few decades. Nearly all European countries have increased the early and statutory retirement ages. In addition, incentives to retire early have been subjected to change. Early retirement pathways, most of which were introduced in the 1970's in response to high unemployment rates, have been closed or made less attractive. Job-search requirements for older workers have been tightened and access to disability benefits has been restricted ². But although the effective retirement age, i.e. the average age at which someone actually exits the labour market, has increased in recent years, it continues to stay behind the statutory retirement age ¹.

Educational inequalities

While policies aimed at extending working lives are targeting the entire working population, these generic policies may have effects on social inequalities. The question is whether the entire group of older workers and retirees can be seen as a whole or whether policies should consider individual differences. One size may not fit all.

In European countries, the statutory retirement age is increasingly being linked to each country's life expectancy ¹. Life expectancy, however, is not distributed evenly across the population. On average in the OECD countries, life expectancy for men aged 65 is 15.8 years for those with low education, 17.1 for those with an intermediate education, and 19.2 years for those with high education. For women these figures are 19.6, 20.8, and 21.9 years ³. Increased longevity itself does not mean that people are able to work longer. Healthy life expectancy may be more meaningful in this regard. And again, a clear social gradient can be found in healthy life expectancy, with those with a low educational level being disadvantaged ⁴⁻⁶. Thus, if the statutory retirement age is raised, people with lower levels of education may be disproportionately affected. Not only will they have more difficulty reaching the statutory retirement age, due to their poorer health, they also live shorter and less healthy life years after retirement.

During working life, there are also clear educational inequalities. Low educated people enter the labour market at an earlier age than those with a higher education, who spend more years in education before they start working. Workers with a low educational level work under more adverse physical and psychosocial conditions compared to higher educated workers ⁷⁻⁹. During the entire life course, those with a low educational level face more physical ¹⁰⁻¹³ and mental health problems ¹³⁻¹⁶ than their higher educated counterparts. Figure 1 visualizes the educational inequalities in self-rated health in the countries included in this thesis.

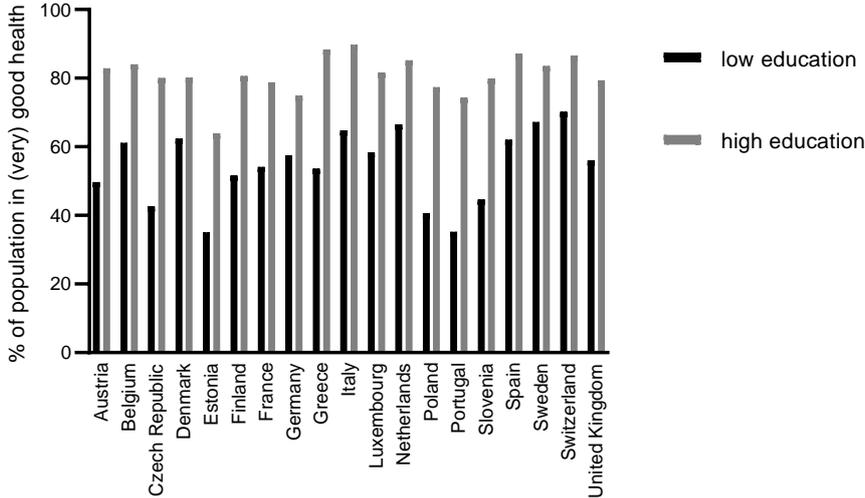


Figure 1. Percentage of population (16+ years old) in good/very good self-rated health by educational level in the 19 OECD countries included in this thesis in 2017 (source: oecd.stat)

Much is still unknown about the association between education and health. And although other contributing factors, such as genetics or health-related behavior, may play a role in this association, quasi-experimental studies have shown that there is a causal effect of education on health ¹⁷.

Early work exit

To be able to extend working lives, we first must know what factors cause early exit from the labour market, so that targeted interventions can be implemented. There are several routes through which older workers can exit the workforce early. Workers may leave due to unemployment, disability, early retirement or they can become economically inactive. Throughout this thesis, early work exit comprises all of these routes.

Health determinants of early work exit

Many studies have shown that poor physical and mental health are important risk factors for early exit from paid work ^{13, 18-21}. Qualitative studies have identified several pathways

through which poor health influences early work exit. First, poor health may make workers feel hindered or unable to do their job now or in the (near) future ^{22, 23}. Second, some workers are afraid that their health would decline even further if they continue working and choose to exit the work force to preserve their health ²³. Third, workers with poor health may feel pushed out by their employer ²³.

To be able to improve the health of older workers through interventions at work, it is necessary to identify which modifiable factors at work are associated with poor health. The influence of working conditions on health may grow in the future, when more time has to be spent at work, due to increasing statutory retirement ages. Physical and psychosocial work demands as well as resources at work, such as autonomy at work, variation in tasks, and social support, have been shown to be associated with both physical and mental health outcomes ²⁴⁻²⁷.

Cross-country differences in early work exit

In most countries many workers still exit the work force well before the statutory retirement age, even though the effective retirement age has increased in the last few years. The gap between the effective retirement age and the statutory retirement age varies between countries. Figure 2 visualizes this gap for the countries included in this thesis.

These cross-country variations suggest that factors at the macro-level play a role in retirement timing. Determinants of retirement timing can be categorized into pull, push, and maintain factors ^{28, 29}. Pull factors make early exit from the labour market financially attractive. Generous benefits may therefore act as pull factors. Examples of measures of generosity are replacement rates and expenditure on passive labour market policies (PLMP). If an unemployment replacement rate, i.e. the ratio of earnings after work exit compared to earnings prior to work exit, is high, this provides a financially attractive alternative to continuing work ³⁰⁻³². A high expenditure on PLMP, consisting of expenditure on unemployment benefits and early retirement schemes, may be an indirect measure of generosity and has also been linked to early work exit ³³.

The actuarial fairness of a pension system is another pull factor that should be considered. There is an implicit tax on continued work when the change in pension wealth from working one additional year is less than the value of contributions paid to the pension ³¹. If the implicit tax is zero, the pension system is said to be actuarially fair. Thus, if there is a high implicit tax on continued work, early work exit is financially attractive, while if there is no implicit tax on continued work, workers leaving the work force early need to pay the price for their increased time in retirement.

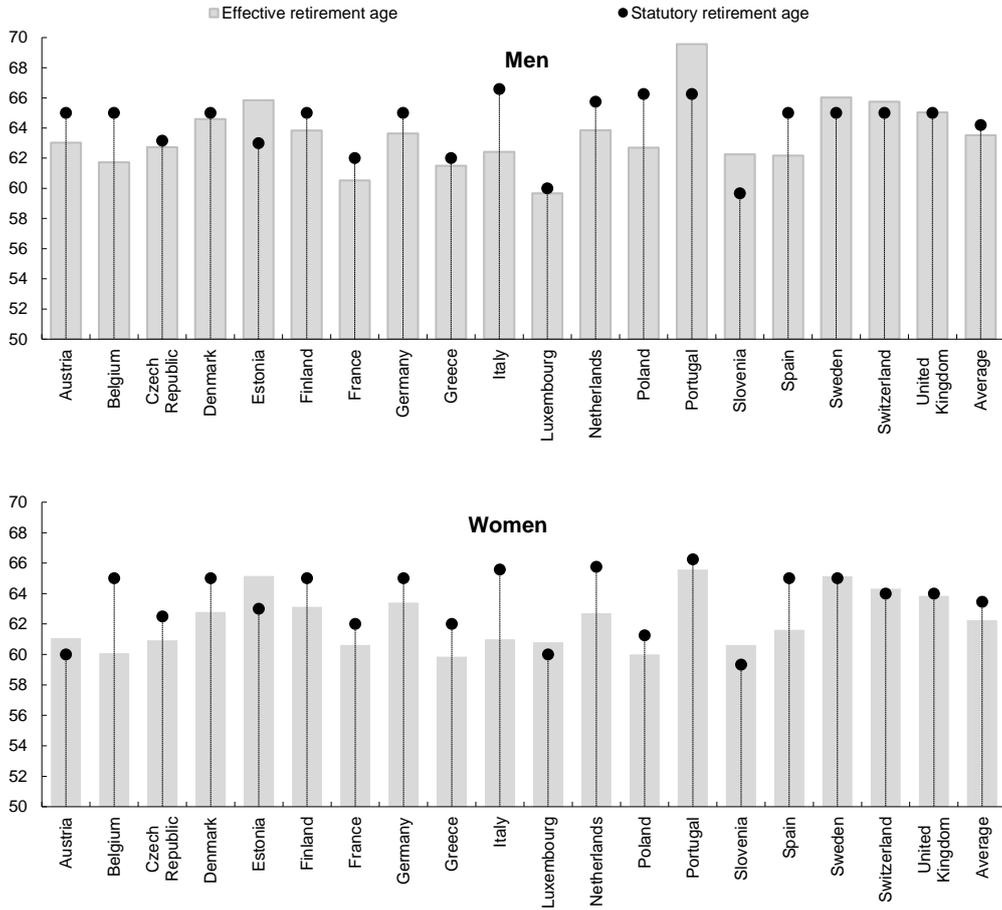


Figure 2. Effective versus statutory retirement age in the 19 OECD countries included in this thesis in 2017 (source: oecd.stat)

Push factors make it more difficult or less attractive to stay in the labour market and therefore ‘push’ workers out of the work force. When there are less employment opportunities, for example when unemployment rates are high, early work exit may be more common ³⁴. Another example of a push factor is a high statutory retirement age, because when workers have to work until later ages, increasing health problems may lead to early work exit ³⁵.

Lastly, there is the group of maintain factors. This group consists of, for example, active labour market policies, aimed at improving access to the labour market for the unemployed and disabled and improving older workers’ employability ^{29, 36, 37}.

Educational differences in early work exit

Reasons why workers exit the work force early vary by educational level. On the one hand, low educated workers usually exit the work force earlier than workers with a high educational level ³⁸⁻⁴⁰, and this is mostly through disability and unemployment pathways. On the other hand, low educated workers are more inclined to work longer because of financial necessity.

Workers with a low education not only have more health problems than higher educated workers, they also tend to have higher physical work demands ⁷, have less control ⁸, and are less able to make changes to their work environment ⁴¹. These working conditions may not only lead to poorer health, but may also make low educated workers more susceptible to the effects of poor health on early work exit. There is indeed some evidence that the impact of health on early work exit is stronger in the lower educated workers, but the number of studies are limited and vary in their measures of health and work exit ^{42, 43}. Macro-level determinants of early work exit may also be more important for lower educated workers. With more generous pension systems, the financial reasons to continue working may become less important. Also, because the lower educated more often are unemployed and disabled, active and passive labour market policies may be more applicable to this specific group of older workers.

Health after work exit

Extending working lives alone is not sufficient to ensure future fiscal sustainability. The ageing of the population also means that there will be an increase in the demand of health and care services ⁴⁴. But maintaining health in retirees is not only necessary from a health care perspective. Retirees may be of great value to society, if their health permits them. They do formal and informal volunteer work ⁴⁵ and they are productive as informal caregivers ⁴⁶. And with populations ageing, and spouses being the fastest-growing group of informal care providers ⁴⁷, the ability to provide informal care is becoming increasingly important ^{47, 48}.

Recent retirees specifically are an important group to consider. Because individuals may be making normative lifestyle changes during life transitions, the retirement transition presents opportunities for health interventions and health promotion ⁴⁹⁻⁵³.

Work determinants of health after work exit

The association between working conditions and health is particularly relevant in the current context, in which workers have to spend more years in the work force due to the increases in the statutory retirement age. Understanding the effects of work on health is not only important during working life, but also thereafter. Although most research on the effects of work characteristics on health has focused on those still employed, there is evidence that these effects are long-term and remain after work exit. Poor psychosocial working conditions and high physical demands have been shown to be associated with poorer physical and mental health after work exit ⁵⁴⁻⁵⁶.

Cross-country differences in health after work exit

Many studies have shown that cross-country differences in health exist in the general population ^{e.g. 57, 58-60}. Research on cross-national variation in the health of retirees, however, is scarce. However, the few studies that did focus on this group also showed substantial health differences between countries ^{61, 62}.

To examine which factors determine these cross-country differences, three approaches have been used: the regime approach, the expenditure approach, and the institutional approach. While the regime approach ⁵⁸, which is based on the assumption that countries are clustered within welfare state regimes, is the most commonly used approach, it has a lot of disadvantages. The welfare regimes under investigation, usually those proposed by Esping-Andersen (liberal, conservative and social democratic regimes) ⁶³ or Ferrera (Anglo-Saxon, Bismarckian, Scandinavian, and Southern regimes) ⁶⁴, are static and changes in policies over time are not taken into account ⁶⁵. Moreover, by using such broad clusters, it is difficult to draw conclusions about the specific macro-level factors affecting individual-level health outcomes ⁶⁵. Another problem is that there still is a high degree of variation in policies between countries within one welfare regime ⁶⁶. To open the ‘black box’ and to specify what aspects of the welfare state are important for population health, other approaches are better suited ⁶⁷. The expenditure approach examines the public spending on social protection and services, like old age pensions, health care, and labour market policies. The institutional approach uses more direct generosity measures than the expenditure approach, and focuses on specific social policies such as pension and unemployment replacement rates ⁶⁵. Studies using these two approaches show that countries that are characterized by relatively high social spending and more generosity in terms of replacement rates, on average have better general population health ^{58, 68-71}. While most research has focused on the general population, there is evidence that a similar positive association between welfare generosity and health can be found in retirees specifically ⁶¹.

Educational inequalities in health after work exit

Educational inequalities in health are not only prevalent in the working age population, but they persist in later life ⁷². Part of these health inequalities may be attributable to adverse working conditions, which are more prevalent among workers with lower education ^{73, 74}. Most research on the mediating effects of working conditions has been done in the working population and has indeed found that working conditions partially explain inequalities in health ⁷⁵. Parker et al. ⁷⁶ focused on retirees and also found that physical working conditions mediate a part of the association between educational level and physical health. However, more research is needed to further understand health inequalities in

retirees. But not only are there educational differences in the exposure to adverse working conditions, the effects of working conditions on health may also differ between educational groups. Low educated workers may be more susceptible to the adverse health effects of poor working conditions, because compared to higher educated workers, they have relatively few material and psychosocial resources to help them cope with adverse working conditions^{77, 78}. Indeed there is some evidence that associations between job strain, i.e. the combination of high demands and low control, and self-rated health, angina, and myocardial infarction are strongest in lower educated workers⁷⁹, but the number of studies investigating this moderating effect of education is small and results are not conclusive⁷⁹.

International comparative studies show that the association between educational level and health differs between countries⁵⁸. Especially with retrenchment high on the political agenda in many industrialized countries^{80, 81}, understanding which factors explain these health inequalities is necessary to prevent the widening of these inequalities. Several theories have been proposed why the impact of certain macro-level factors may be stronger in the lower educated. First, more generous welfare systems have a redistributive impact. They reduce income inequalities and prevent poverty and material deprivation, which are known risk factors for poor health⁸². Disadvantaged groups, such as the lower educated, may benefit most from generous welfare policies, because they have less resources to begin with and are the most likely to be entitled to receive benefits. Second, higher social spending and higher replacement rates ensure a sense of security and weaken perceptions of inferiority and relative deprivation, which have also been shown to lead to more stress and poorer physical and mental health⁵⁹. Third, educational level also influences access to and quality of health care⁸³. Thus, policies promoting equal and universal access to high-quality care would also be expected to result in smaller health inequalities. Indeed there is evidence that educational inequalities in population health are smaller in countries with more generous welfare policies⁵⁸. However, no studies have examined the role of macro-level factors on health and health inequalities in recent retirees specifically.

Objectives

This thesis is part of the project ‘Social inequalities in extending working lives of an ageing workforce’ (EXTEND). Researchers from five countries (the Netherlands, England, Denmark, Germany, and Finland) collaborated with the aim of examining social inequalities in relation to extending working lives. The primary objectives of this thesis are:

- To identify determinants of early work exit across educational groups;
- To identify work place determinants of health in older workers across educational groups;
- To identify determinants of health after work exit across educational groups.

Outline of this thesis

This thesis consists of two parts. Part 1 focuses on the years before work exit and addresses the first two objectives. Chapter 2 presents a study on educational differences in the influence of poor health on early work exit. In chapter 3, we take a closer look at which work characteristics are associated with poor health in older workers. In chapter 4, macro-level determinants of early work exit are examined. Part 2 focuses on the years after work exit and addresses the third objective. In chapter 5 educational inequalities in health after work exit are investigated as well as the role of work characteristics in these inequalities. In chapter 6, macro-level determinants of health and health inequalities after work exit are discussed. Chapter 7 discusses the main findings of the previous chapters. Furthermore, methodological considerations, implications for policy and practice, and recommendations for future research are presented. A schematic overview of the research questions in each chapter can be found in Figure 3. Table 1 provides an overview of the datasets used, main determinants, and main outcomes by chapter.

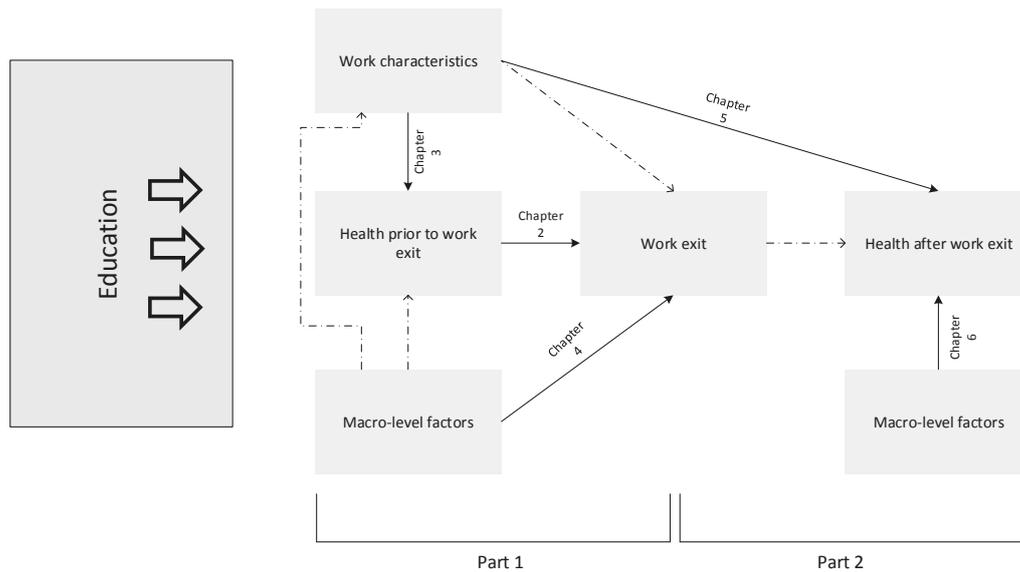


Figure 3. Schematic overview of this thesis

- examined in this thesis
- - - - not examined in this thesis

Datasets used in this thesis

For the secondary data analyses conducted in this thesis, six datasets were used. Longitudinal datasets of the five participating countries in the EXTEND project were used (LASA, ELSA, DLSA, DEAS, and FLAME) as well as a large European dataset (SHARE). In chapters 2 and 5, we adopted a coordinated analysis approach. The aim of this approach is to make results as comparable as possible. This is achieved by coordinating the measurement and statistical analysis protocol across studies. Therefore, in the studies in these chapters, we included comparable predictor and outcome variables and conducted identical statistical analyses. By replicating the results in such a way, generalizability of the research findings across countries can more easily be evaluated ⁸⁴.

LASA

In chapters 2, 3, and 5, data from the Longitudinal Aging Study Amsterdam (LASA) were used. LASA is an ongoing, prospective cohort study in the Netherlands on the determinants, trajectories and consequences of physical, cognitive, emotional, and social functioning in older adults. The first measurement wave was conducted in 1992-1993 on a sample of 55-84-year-old respondents, with follow-ups every three to four years. In 2002-2003 and 2012-2013 a second and third cohort of respondents aged 55-64 were added. The data collection included computer-assisted face-to-face interviews and clinical tests by trained interviewers and self-completed questionnaires ⁸⁵⁻⁸⁷.

ELSA

In chapters 2, 4, 5, and 6, data from the English Longitudinal Study of Ageing (ELSA) were used. ELSA is a panel study of a representative cohort of men and women aged 50+ living in private households in England. ELSA was developed as a companion study to the Health and Retirement Study (HRS) in the USA, and is designed to provide directly comparable data between the studies. The study began in 2002 and respondents were examined with 2-yearly intervals. The survey contains a broad range of information including demographic characteristics, social and economic circumstances, and mental and physical health, collected from a combination of face-to-face interviews, nurse visits, and self-completed questionnaires ⁸⁸.

DLSA

In chapters 2 and 5, we used data from the Danish Longitudinal Study of Ageing (DLSA). DLSA is a prospective cohort study in Denmark, with measurements every 5 years, starting in 1997. To date, DLSA consists of five waves, collected in 1997, 2002, 2007, 2012 and 2017. A new cohort of 52-year-olds was added in each wave. DLSA covers a wide range of topics regarding social, work, psychological and health-related processes in ageing. Interviews for the DLSA were performed by trained interviewers from Statistics Denmark through computer-assisted telephone interviews. If a telephone interview was not possible due to the health status of the respondent, a home visit was offered instead ⁸⁹.

DEAS

In chapters 2 and 5, data from the German Ageing Survey (DEAS) were used. DEAS is a nationwide representative longitudinal survey of the German population aged 40+. Core topics of DEAS are health and well-being, work and income, and family and social relationships. Data collection started in 1996 and further waves followed in 2002, 2008, 2011 and 2014, with new cohorts added every six years. Data were collected from face-to-face interviews and self-completed questionnaires ⁹⁰.

FLAME

In chapter 4, data from the Finnish Longitudinal Study on Municipal Employees (FLAME) were used. The baseline sample comprised respondents aged 44 – 58, living in Finland, working in municipal occupations, and having worked at least 5 years in their current occupation. Baseline data were collected in 1981 and four waves followed in 1985, 1992, 1997, and 2009. ⁹¹

SHARE

In chapters 4 and 6, we used data from the Survey of Health, Ageing and Retirement in Europe (SHARE). Like ELSA, SHARE was closely modelled after and harmonized with the HRS, to facilitate opportunities for cross-national analyses. SHARE is a multidisciplinary and cross-national panel database of micro-data on health, socio-economic status and social and family networks, covering 27 European countries and Israel. In chapter 4, we used wave 4 (2011) and 5 (2013) and used data from 13 countries: Austria, Belgium, the Czech Republic, Denmark, Estonia, France, Germany, Italy, the Netherlands, Slovenia, Spain, Sweden, Switzerland. In chapter 6, we used wave 6 (2015), with data collected in Austria, Belgium, Switzerland, Germany, Denmark, Spain, France, Greece, Italy, Sweden, Czech Republic, Poland, Estonia, Portugal, Slovenia, and Luxemburg. To obtain Dutch data, we used wave 5 (2013), because in wave 6 the Netherlands was not included.

Table 1. Outline of this thesis

Chapter	Datasets	Main determinants	Main outcome(s)
1: General introduction	-	-	-
2: Educational differences in the influence of health on early work exit among older workers	<ul style="list-style-type: none"> • LASA • ELSA • DLSA • DEAS 	<ul style="list-style-type: none"> • Self-rated health • Functional limitations • Depressive symptoms 	<ul style="list-style-type: none"> • Early work exit
3: Work characteristics and health in older workers: educational inequalities	<ul style="list-style-type: none"> • LASA 	<ul style="list-style-type: none"> • Physical job demands • Psychosocial job demands • Variation in tasks • Autonomy • Job strain 	<ul style="list-style-type: none"> • Self-rated health • Functional limitations • Depressive symptoms
4: Educational differences in macro-level determinants of early exit from paid work: a multilevel analysis of 14 European countries	<ul style="list-style-type: none"> • SHARE • ELSA 	<ul style="list-style-type: none"> • Minimum unemployment replacement rate • Expenditure on active labour market policies • expenditure on passive labour market policies • Employment protection legislation • Unemployment rates • Statutory retirement age • Implicit tax on continued work 	<ul style="list-style-type: none"> • Early work exit
5: Educational inequalities in health after work exit: the role of work characteristics	<ul style="list-style-type: none"> • LASA • ELSA • DLSA • DEAS • FLAME 	<ul style="list-style-type: none"> • Educational level • Physical job demands • Psychosocial job demands • Variation in tasks • Autonomy 	<ul style="list-style-type: none"> • Self-rated health after work exit
6: Macro-level determinants of post-retirement health and health inequalities: a multilevel analysis of 18 European countries	<ul style="list-style-type: none"> • SHARE • ELSA 	<ul style="list-style-type: none"> • Social expenditure in 9 policy areas • Unemployment and pension replacement rates 	<ul style="list-style-type: none"> • Self-rated health after work exit
7: General discussion	-	-	-

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