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Interplay between work, retirement and health in an ageing society

Sewdas, R.A.

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E-mail address:

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Summary

In the Netherlands and many other Western countries, the population is ageing rapidly due to lower fertility rates, longer life expectancies and maturing *baby boomers*. People live much longer compared to previous centuries. This means that, if the retirement age would stay the same, people would spend more time in retirement. This increase in people spending more time in retirement will lead to an increase in costs of pension systems. To minimize the economic burden on social security systems caused by the ageing population, current European policies encourage older workers to prolong their work participation. Many countries have raised the statutory retirement age and have taken measures to discourage early exit from the labour force. As a consequence, older workers are working longer than before. This accounts for healthy workers as well as for those with chronic diseases or disabilities. Of particular concern, however, is whether everyone can work until the retirement age in a healthy manner, and whether and to what extent an increasing retirement age may affect the health of older workers after retirement.

The overall aim of this thesis is to gain insight into the interplay between work, retirement and health of older workers. The primary objectives of this thesis are: 1) to identify determinants of work participation and retirement for older workers with and without chronic diseases, and 2) to gain insight into health-related consequences of work participation and retirement.

Determinants of work participation and retirement

In **chapter 2**, the determinants of retirement timing, and relevant domains among older workers from both an economic and occupational health perspective were explored in a systematic review. The systematic literature search resulted in 20 longitudinal studies on determinants of retirement timing. The determinants of retirement timing were classified into eight domains: demographic factors, health factors, social factors, social participation, work characteristics, financial factors, retirement preferences, and macro effects. In total, we identified 49 determinants, ranging from one (social, and retirement preferences) to 21 determinants (work characteristics) per domain. The findings suggest that there is a wide range of determinants that influence retirement timing.

In **chapter 3**, the association and interactions of physical workload and poor health with health-related job loss (HRJL) among older workers, and the association and interactions

of occupational social class and poor health with HRJL were studied. Data was used from an existing prospective cohort study, Health and Employment after Fifty (HEAF) in the United Kingdom, where employed or self-employed workers aged 50-64 years (N=4,909) were followed-up between 2014 and 2016. Male and female older workers with poor self-perceived health status had increased risk of HRJL during the 2-year follow-up period (HR 2.57 and HR 3.26, respectively). Furthermore, men with a physically demanding job were at increased risk for HRJL (HR 1.63). For men, no significant interactions were found between poor health and physical workload, nor between poor health and lower occupational social class. For women, we showed that the combination of working in higher managerial, administrative and professional occupations together with poor health, increased the risk of HRJL. Based on these findings, it was concluded that older workers in poor health, and older workers with a physically demanding job, are at increased risk of HRJL. Having a physically demanding job or working in routine/manual occupations does not moderate the association between poor health and HRJL.

Chapter 4 focused on the differences in determinants (i.e., health-related, work-related and social factors) of voluntary early retirement between older workers with and without chronic diseases in Denmark. Workers aged 56-64 years who were members of a voluntary early retirement scheme were selected from the Danish National Working Environment Survey (2008-2009) and were followed in a public register for four years. Determinants associated with voluntary early retirement did not significantly differ between older workers with or without chronic diseases. For both groups, determinants associated with a higher risk of voluntary early retirement included poorer self-rated health, more depressive symptoms, higher physical workload, lower job satisfaction, and lower influence at work. For older workers with chronic diseases, the presence of work-family conflict was also associated with higher risk of voluntary early retirement, whereas for those with no chronic diseases, a poorer relationship with colleagues was an additional determinant.

In **chapter 5** the differences in determinants of working until retirement compared to a reference group who have transitioned to early retirement among workers with and without chronic diseases was studied. This was studied among Dutch workers aged 57-62 years (n=2445) that were selected from an existing prospective cohort study—the Study on Transitions in Employment, Ability and Motivation (STREAM). A better perceived physical health status and fewer depressive symptoms were statistically significant determinants of working until retirement for those with chronic diseases (OR 1.02; OR 0.59, respectively), and for those without chronic diseases (OR 1.06; OR 0.58, respectively). Furthermore,

in older workers with chronic diseases, better perceived mental health (OR 1.02), higher mastery (OR 1.24), and more autonomy at work (OR 1.34) were significantly associated with working until retirement. Two determinants of working until retirement were found to differ between workers with and without chronic diseases: while among older workers with chronic diseases more autonomy at work was a statistically significant determinant of working until retirement, this determinant was not significantly associated with working until retirement among those without chronic diseases. Furthermore, the analyses showed that among workers with chronic diseases, a higher degree of mastery had a statistically significant effect on working until retirement, while this determinant was not significantly associated for those without chronic diseases. Therefore, the majority of the determinants of working until retirement appeared to be similar for older workers with and those without chronic diseases. However, autonomy and mastery showed different effects among both groups of older workers.

Chapter 6 aimed to gain insight into reasons for working beyond the statutory retirement age from older workers' perspectives. According to previous research, transitions in employment status are influenced by determinants in five domains: health, work characteristics, skills and knowledge, and social and financial factors. Our second aim was to explore how these domains can be applied to working beyond retirement age. The study included qualitative data from individual interviews (n=15) and three focus groups (n=18 participants) conducted with older workers aged 65 years and older continuing in a paid job or self-employment. This study demonstrated that various preconditions and motives influence working beyond the retirement age. The most important motives for working beyond retirement age were maintaining daily routines and financial benefit. Good health and flexible work arrangements were mentioned as important preconditions. The themes emerging from the categorization of the motives and preconditions corresponded to the domains of health, work characteristics, skills and knowledge, and social and financial factors from previous research. However, our analysis revealed one additional theme: purpose in life.

Health-related consequences of work participation and retirement

Chapter 7 also used quantitative data from STREAM as in **chapter 5**. This study aimed to explore: 1) the differences in self-rated health and work ability of self-employed workers and employees, 2) whether self-employment is associated with better self-rated health and work ability across three years, than employment, and 3) the role of sociodemographic,

health- and work-related characteristics (e.g., mental load, physical load, and autonomy) in these relations. Self-employed ($n=1,029$) and employees ($n=12,055$) aged 45-64 years were followed during 2010-2013. The self-employed had better work ability (8.3 versus 8.2), and better self-rated health (3.4 versus 3.3) than employees. Work ability of self-employed improved over time, compared to the changes over time in work ability among employees, but no difference in change over time in self-rated health was found. None of the interaction terms were statistically significant ($p>0.05$). This study showed that the self-employed had better self-rated health and work ability than employees. Furthermore, self-employment was significantly associated with positive changes over time in work ability compared to the changes over time in work ability among employees.

Chapter 8 summarized available evidence on the association between early and on-time retirement compared to continued working and mortality. Moreover, this study investigated whether and to what extent gender, adjustment for demographics and prior health status influence this association. A systematic literature search of longitudinal studies that investigated the association between retirement and mortality was conducted. In total, 25 studies were included in the qualitative analysis, and 12 studies were included in the meta-analysis. There was no association between early retirement and mortality compared to working until retirement (fully adjusted subgroup: HR 1.05). On-time retirement was associated with a higher risk of mortality compared to working beyond retirement (insufficiently adjusted subgroup: HR 1.56). However, in the subgroup of studies that adjusted for prior health, on-time retirement was not significantly associated with mortality (HR 1.12). This might reflect the healthy worker effect. Furthermore, we found that it is important to consider the influence of prior health status and demographics in the association between retirement and mortality to avoid biased conclusions.

Conclusions and discussion

In **chapter 9**, the main findings of this thesis were summarized and methodological features of this thesis were discussed related to the role of financial factors, the measures of health status and the use of longitudinal data. Furthermore, a selection of key insights in this thesis are described in the context of two important themes: the healthy worker effect and the ideal pension agreement. In addition, several recommendations for research and practice that can be derived from this thesis were presented.

Regarding future research, it was recommended to take a multidisciplinary approach in work participation and retirement studies and to consider information on work life history to longitudinally study the determinants of work participation and retirement. To study the health-related consequences of work participation and retirement, it was recommended to consider a possible healthy worker effect. This is important to avoid a biased conclusion that working longer results in living longer.

The following recommendations were suggested for policy and practice. First, employers should focus more on disease prevention by implementing workplace interventions that include monitoring the health of older workers. Second, employers should invest in favorable working conditions for older workers. These working conditions include a shorter working day, options to work from home, more autonomy at work, lower physical demands and the opportunity to learn new skills. Third, policymakers should improve the availability of a (partial) retirement option before the retirement age for a subgroup of workers. These strategies could help older workers to remain active at work in a healthy manner while having favorable working conditions.