Chapter 9
Health, Working Conditions and Retirement

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Introduction

Europe's population is getting older. According to demographic projections by the European Commission's Centre of Expertise on Population and Migration, the EU-28 population size will be fairly similar to the current levels of roughly 510 million in 2060 (Lutz et al., 2019). However, the size of the working-age population, those aged between 15 and 64 years old, will steadily decline from roughly 300 million to less than 260 million during the same period of time. This secular trend has been accelerated by two concomitant factors, a general decline in birth rates and an outstanding improvement in life expectancy. These tendencies and the consequent ageing process are heterogeneous across countries, as they are relatively milder in Scandinavian countries, Germany and the UK, while they are more pronounced in Eastern- and Southern-European countries. However, all of the European countries are expected to experience some degree of growth in the average age of their population when using the most realistic projections for the dynamics of fertility and migration rates.

Ageing provides new challenges for policy-makers and the society in general. The European old age dependency ratio (the ratio of number of elders, generally inactive, to working age individuals) is expected to more than double in 2050 from its 2001 levels, growing from 23.5% to 49.9% (Eurostat, 2019). In other words, by 2050 there will just be over two persons of working age supporting and taking care

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of every older person, implying that the pressure on welfare state institutions and public finances will grow substantially. One of the main pillars of policies addressing the ageing problem has been a focus on incentivizing people to extend their working life at older ages by restricting access to retirement. According to Eurostat's statistics, the share of persons aged 60–64 in employment has been growing by more than 50% in the last decade among EU-28 countries, a tendency that can be mainly attributed to the general increase in statutory retirement age (Eurostat, 2019). Projections based on planned pension eligibility rules suggest that this tendency is going to grow further. One area that received particular attention was the reform of pension systems. In Europe, the number of pension reforms implemented has being growing from a few reforms per year at the beginning of the 90s to almost 100 reforms at the end of 2000 (Arpaia et al., 2009). The common aims of these reforms were to increase effective retirement age, to restrict the generosity of pension systems or to modify pension criteria/parameters increasing the statutory pension age. All in all, these reforms led to a new norm in Europe where retirement age is 65 years. Remarkably, many EU countries expect to further increases in retirement age to age 67 or beyond, when retirement age is linked to life expectancy (OECD, 2015). Moreover, structural changes in the labour market, induced by the tightening of eligibility conditions for statutory retirement, the even higher age when entering the labour market and the wider diffusion of fragmented working careers (Fenton & Dermott, 2006) will likely increase the proportion of people working beyond statutory pension age in order to accrue enough pension contributions for a minimum healthy living (Morris et al., 2007).

For these reasons, the issue of whether and to what extent older workers can remain attached to the workforce is a topic of enormous policy relevance. There are severe concerns about the ability to keep working at older ages, especially among workers in more physically demanding occupations. Among low-skilled manual workers about 40% think they will not be able to do their current job until they are 60 (EWCS, 2019). This percentage is much lower among the high-skilled clerical workers, but even in this group on average in the European Union 1 out of 5 individuals are sceptical about doing their current job at age 60 (EWCS, 2019).

Hence, work sustainability is the greatest concern, because an important proportion of older workers have chronic morbidity or functional limitations, which decrease their ability to deal with occupational demands and tasks. Insights from the European Working Conditions Survey (EWCS) relate to this, showing that a quarter of all workers in the European Union report that their work affects their health negatively (see Fig. 9.1), while another 12% report that their health is affected positively by work. This clearly indicates that work is an important determinant of individuals' perceived health. At the same time, working conditions, such as hours worked, standing or maintaining awkward postures, and being exposed to cognitive and emotional demands, remain quite constant along the working life, as emerged comparing exposures to such factors in different age groups in the European Working Conditions Survey (EWCS) data (Ardito & d'Errico, 2018).

Health limitations in the older working age population are very prevalent. In the UK, nearly every second men and women aged 55–64 years is diagnosed with one

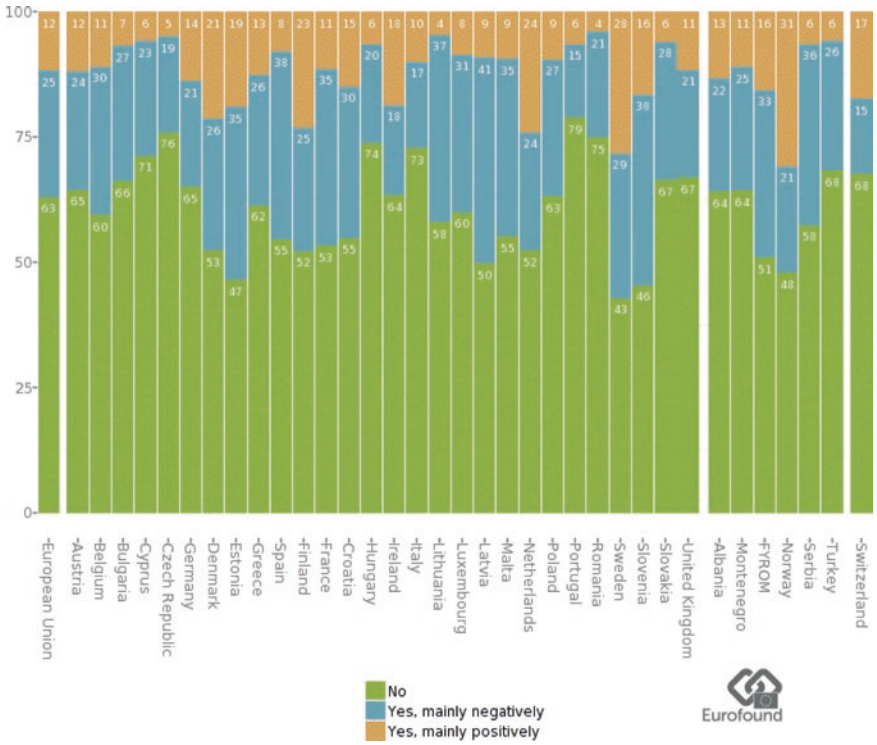

Fig. 9.1 Does your work affect your health?
Note: Answers to the question "Does your work affect your health?" with possible answers "No", "Yes, mainly negatively" and "Yes, mainly positively". Source: EWCS, 2019

or several chronic diseases, such as diabetes, hypertension or arthritis (Fleischmann et al., 2018). In Italy, more than 30% of subjects 60–65 years employed or formerly employed report physical limitations and almost one quarter has a physical or a mental disorder. The most prevalent health condition is osteoarthritis, which is very common especially among manual workers, both among men (26%) and women (31%) (Ardito & d'Errico, 2018). Such a high prevalence of health disorders and physical limitations among older workers is consistent with what is reported in other countries. For example, according to the 2003 Work and Health Interview Study, which was representative of the Finnish working population, in the age group of 55–64 years 50% of the working men and 60% of the working women had long-term illnesses and of all of the working people with long-term illnesses, about 40% reported that their illnesses interfered with their work (Ilmarinen, 2006).

In this chapter we proceed to discuss how working conditions could determine retirement (section "Working Conditions as Determinants of Retirement") and eventually focus on how working conditions influence the effect retirement has on health (section "The Health Effect of Retirement"). Both sections are introduced by

theoretical notions on the underlying association. The final section summarized the findings and proposes policy implications (section "Conclusions and Policy Recommendations").

Working Conditions as Determinants of Retirement

Theoretical Notions

Theories explaining the role psychosocial working conditions have for retirement are borrowed from research on job strain and job stress. In general, these theories posit that unbalanced working conditions may create job strain and be unhealthy for individuals. We shortly introduce four models from that field: the person-environment fit, the job demands-control (support), the effort-reward imbalance, and the job demands-resources model.

First and most generally, the person-environment (P-E) fit model identifies two aspects along which the working environment is categorized: the needs and abilities of the individual ("person") and the demands and opportunities provided by the work environment (e.g. Edwards & Cooper, 1990; Siegrist, 2001). The advantage of this model – it is very broad and can be fit to many working conditions and environments – is also a disadvantage: the two aspects are very universal and can hardly be operationalized consistently in research (Siegrist, 2001). This possibly problematic feature, as well as other theoretical and methodological shortcomings have long been known, as depicted in a review of the P-E fit literature from 1990 (Edwards & Cooper, 1990). Other models, introduced below, have the advantage to provide standard questionnaires and tools to measure working conditions.

The most widely used model is Karasek's job demand-control model (Karasek, 1979). It posits that the combination of job demands (i.e. work pace, conflicting demands) and job control (i.e. decision latitude, autonomy, job variety) defines the level of job strain. For example, high job demands and low job control would likely be related to elevated levels of job strain, whereas high job demands may be buffered by high job control, creating a healthier working environment. The job demand-control model was subsequently expanded by Johnson and Hall by adding social support (Johnson & Hall, 1988). The developed job demand-control-support model suggests that social support by colleagues or supervisors is an important element of the workplace as well and may attenuate adverse effects of high job demands.

Furthermore, the effort-reward imbalance model (Siegrist, 1996) states that an imbalance between high effort (created by job demands and motivation) and low rewards (i.e. salary, promotion prospects, job security) produces a condition at work that is characterized by high cost and low gain for the employee. In case this reciprocity between costs (effort) and gain (rewards) is absent, it may produce stress reactions and lower employees' wellbeing and health.

Finally, the most recent model on job strain is called the job demands-resources model (Bakker & Demerouti, 2007). It assumes that all psychosocial characteristics of work are either job demands or job resources. Job demands are any effort put in the job and associated with costs for the employee, while job resources can help employees in achieving their goals, reducing job demands or stimulating personal growth.

Prior Findings: How Does Work Determine Retirement?

In studying how work relates to retirement, 'work' might relate to the psychosocial working environment, as described above, but can also relate for example to the socio-economic or occupational grade at work.

A study by Radl (2013) shows that older workers of lower as well as higher socio-economic position (SEP) were more likely to retire late, but their motivation was different. People with lower SEP frequently felt a (financial) necessity to remain at work because of lower pension contributions and limited access to occupational pensions. On the contrary, later retirement was rather a voluntary choice for older persons with higher SEP, mostly because they were protected from unemployment or job loss. The same U-shape pattern of retirement age by SEP emerges from two different studies by analysing EU (Hofäcker et al., 2015) and Germany data (Hofäcker & Naumann, 2015).

More diversified findings evolve of the comparative study by Carr et al. (2018), analysing seven datasets from four countries (United Kingdom, France, Finland, United States). They show that occupational inequalities in work exit at older ages are far from unequivocal across gender and country. The authors report that among men, low occupational grade increased hazard rates of work exit in France, Finland and the US, but they did not find significantly higher hazard ratios of work exit in any of the four UK datasets. Among women, low occupational grade was associated with increased hazard ratios in Finland, the United Kingdom (one dataset) and France (Carr et al., 2018).

A recent study on the Dutch population showed large educational differences in working life expectancy (Robroek et al., 2020): low-educated men had a working life expectancy of 20.9 years at age 30, while this was 28.2 years for high-educated men, a difference amounting to 7.3 years. For women, the difference between low and high education was even larger (9.9 years), with a working life expectancy of 16.9 years at age 30 for low-educated women, but 26.8 years for high-educated women. These figures exemplify that premature exits and more fragmented careers, with longer periods of unemployment, result in huge differences in the total number of years worked for lower educated groups (Robroek et al., 2020).

The studies on occupational and education differences in work exit can be complemented by research investigating the association between the psychosocial working environment and retirement. As already referred to in the theoretical notions, one of the main challenges of summarizing the findings is that different

operationalizations of job demands, job resources, etcetera are used. For example, job resources are frequently operationalized as job control, but can also refer to opportunities to develop or to skill discretion (Browne et al., 2019). As such, results from two studies are hardly ever directly comparable.

A recent review by Browne et al. (2019) aims at summarizing prior research of a large range of psychosocial working conditions (job demands, job resources, social support, effort-reward imbalance, organizational resources, and job satisfaction) and their relationship with actual retirement. The findings of their review, relying on 46 papers reporting on 81 analyses, are summarized in the table below (based on Table 9.1 in Browne et al., 2019). The authors showed that job resources were related to later retirement in 16 out of 28 reviewed analyses. When considering job control only, the way that job resources were mostly operationalized, 10 of 18 reviewed papers indicated they contributed to later retirement, while the remaining eight analyses reported null results. For job demands, most analyses (18/22) showed no significant association with retirement, and only two of the reviewed analyses reported earlier retirement and two later retirement with higher job demands. When regarding retirement intentions (not shown in Table 9.1) rather than actual retirement, the picture is more as expected: job demands were related to earlier retirement intentions in 5 of 13 analyses, and yielded null results in the remaining eight (Browne et al., 2019). Social support was related to actual later retirement in 6/14 studies, but insignificant associations were reported in 7/14 studies. Other working conditions that were included in the review were satisfaction, job insecurity, organizational resources, and effort-reward imbalance. For each of those working conditions, very few analyses were existent and the results mostly insignificant, not allowing to draw clear conclusions of their association with retirement. Summarizing the results, it appears that a good working environment, such as job resources and social support, are generally found to relate to later retirement. For job demands, prior evidence is less straightforward, and most previous studies did report null results for their relation with retirement. Putting this in the theoretical context, it might imply that job demands are not per se problematic, as long as individuals are

Table 9.1 Summary of evidence for associations between psychosocial working conditions and actual retirement

	Direction of results			
	Earlier retirement	Null	Later retirement	Total
Resources	1	11	16	28
Demands	2	18	2	22
Social support	1	7	6	14
Satisfaction	–	5	5	10
Organisational resources	–	1	1	2
Effort-reward imbalance	–	2	1	3
Job insecurity	1	1	–	2
Total	*5*	*45*	*31*	*81*

Note: Authors' elaboration based on Browne et al. (2019). Numbers represent papers that reported the associations of interest

equipped with the right working environment, such as job control, job resources, or social support, to deal with them.

All in all, prior research supports the idea that a 'good' working environment is essential for individuals' health and retirement. In line with this, it is often advised, as discussed below, that for example employers and health policy managers improve individuals' working conditions to yield an extended (and healthy) working life.

The Health Effect of Retirement

Theoretical Notions

There is an extensive literature of epidemiological, sociological and health economics studies investigating whether retirement and postponing retirement may influence the physical or mental health of workers. In the following section, we provide an overview of theoretical frameworks highlighting the possible impact of the transition to retirement on health. The section will be concluded by a discussion on the difficulties empirical research is facing in establishing such an impact.

Retirement is a major life course transition, according to both psychological and sociological theories. These theories, however, produce conflicting predictions regarding the health consequences of retirement. For example, the stress and coping theory (Lazarus & DeLongis, 1983), social capital theory (Bourdieu, 1986; Coleman, 1990) and role theory (George, 1993), consider retirement as a life transition carrying negative consequences on health. According to the stress and coping theory, retirement negatively affects health by being disruptive of social contacts, usual daily activities, behaviours and lifestyles, whereas for the social capital theory its negative effect on health originates from the loss of social networks following retirement. Role theory predicts a negative influence of retirement on health because retired individuals experience a disruption in their social identity with the disappearance of their work role.

In contrast, other theories predict no change in health or an improvement in health caused by retirement. For example, continuity theory (Atchley, 1989; Atchley, 1999) claims that individuals are regularly guided by existing internal mental frameworks, which make them more likely to maintain similar patterns of behaviour or lifestyle across time and transitions. This implies that retirement would exert very small or no disruption and, consequently, no substantial effects on health. Activity theory (Lemon et al., 1972) proposes instead that successful aging occurs when older adults stay active and maintain social interactions. Retirees will aim at pursuing life satisfaction by dedicating more time to their social contacts and to other leisure activities in order to keep active and replace former roles with other alternatives.

The inconclusiveness regarding the question how retirement affects health is also evident in empirical work. Some studies identify detrimental effects, others no

effects, and even others positive effects of retirement on health. We summarize these inconsistencies according to four driving factors explaining such heterogeneities in the results.

First, the empirical literature investigating the health effect of retirement focused on a variety of different health outcomes, such as mental health, cognitive abilities, general self-assessed health or physical health. Depending on the health outcome under scrutiny, the effect of retirement varies. A systematic review of the results of 22 longitudinal studies concluded that there was strong evidence that retirement has beneficial effects on mental health, but those results are contradictory regarding physical health (van der Heide et al., 2013). Most of the included studies assessed changes in self-reported general or physical health after retirement and only few of them evaluated the occurrence of objective outcomes, such as mortality or incidence of chronic diseases. Furthermore, in most of the studies examined in this review, the majority of subjects had retired long before the statutory pension age, possibly implying that the reason for retirement was health and personal motives. Another recent systematic review, which focused on the effect of retirement on cardiovascular disease (CVD) and CVD-related risk factors, based on the evidence of 82 longitudinal studies, reported quite inconclusive results which varied greatly depending on the country, health outcome and, at greater extent, the study design (Xue et al., 2019).

This leads to the second argument that may explain inconsistencies across studies: the study design. The adoption of a correlational or a causal design may have an impact on the direction of the association between retirement and health. In fact, retirement is inherently a personal choice, and prior health and socio-economic status are crucial confounding factors influencing both the retirement transition and subsequent health. 'Who retires when' might for a large extent be induced by selection, which is also subsumed in the so-called 'healthy worker effect'. It comprises the idea that individuals with poor health are more likely to leave the labour market (early). In line with this, it has been consistently reported that individuals belonging to higher social classes or with higher education display lower morbidity and mortality from many causes (Huisman et al., 2004; Cavelaars et al., 1998; Langenberg et al., 2005; Melchior et al., 2013), and at the same time they retire on average later than those in lower social classes (Whiting, 2005). Therefore, health and socioeconomic status are potential confounders and may produce artificially reduced morbidity among workers retiring later. It should, thus, be kept in mind when assessing research on retirement and health that most studies did not (aim to) tackle endogeneity. As such, this research is primarily correlational and cannot be used to evaluate the *causal* effect that retirement has on subsequent health.

A third important methodological aspect appears to be the lack of consensus about how to define retirement. For example, retirement might be voluntary or involuntary, with differential effects for individuals' health: Bassanini and Caroli (2015), Filomena and Picchio (2022) and Van Der Heide (2013) provide evidence that adverse health effects more likely arise when individuals are forced to stop working rather than choose it.

Moreover, some studies define retirement by labour market exit at statutory retirement age while others pool together all reasons for labour market exit, such as retirement due to health reasons, long term unemployment or inactivity. Thus, the definition of retirement varies largely across studies making the comparability of results difficult. The inclusion of disability retirement or unemployment, moreover, poses potential problems of reverse causality and misclassification, because transitions caused by a health issue (e.g. disability retirement) and transitions that display independent health effects are entangled. This is, for example, evident in the vast literature on the health consequences of unemployment.[1]

Finally, the role of the type of work performed before retirement deserves further attention in this thematic literature, since it appears as an important factor influencing the sign and the size of the effect of retirement on health, as shown by the studies revised in the next section. Intuitively, it is expected that a worker will likely feel relieved from retirement if he/she was exposed to adverse psychosocial or physical working conditions, therefore improving his/her health or wellbeing with the transition into retirement. In contrast, the transition to retirement may have a negative impact on health if the worker was performing a stimulating and fulfilling job, allowing pleasant social contacts and adequate rewards.

Prior Findings: How Does Work Before Retirement Moderate the Relation Between Retirement and Health?

In this section, there will be a short revision of the studies that provide evidence of the differentiating effect of retirement on health depending on the quality of work performed before retirement. The studies reviewed focus on large array of objective and subjective health outcomes, i.e. hospitalization for CVD, GHQ depression, SF-12, cognitive function, physical functioning and self-rated health.

Among the findings reported in the literature, a study from Italy (Ardito et al., 2020), which uses a large administrative database of social security pension records matched with hospitalized data, shows that delayed retirement increases the risk of hospitalization for CVD only for specific categories of workers, mainly characterized by more disadvantaged working conditions and worse health. By adopting an instrumental variable strategy, which allows drawing causal conclusions on the obtained estimates, the authors showed that delaying retirement increased the risk of CVD hospitalization for those who were previously employed in low paid jobs, in low- and mid-skilled manual occupations, in the manufactory sector and who had worse health before retirement. On the contrary, the results indicated that for workers with better health and employed in high paid jobs, or in clerical or intermediate and managerial occupations, as well as in the service sector, postponing retirement did not significantly affect their risk of CVD hospitalization.

[1] See for example: Maclean et al., 2015; Roelfs et al., 2011; Ardito et al., 2017

Another recent paper reached very similar conclusions (Carrino et al., 2020). The authors examined what the health impact was of the 2010 UK pension reform that increased women's State Pension age (SPA) for up to 6 years using Understanding Society Data. The authors show that women from routine-class manual occupations, who had to delay retirement because of the reform, suffered a large negative mental and physical health effect, measured through the GHQ depression score and the SF-12 mental and physical scores. For women from "intermediate" or "managerial" categories, who had a significant better mental and physical health than routine workers, the change in SPA did not significantly affect any of their health outcomes (Carrino et al., 2020).

Evidence of heterogeneity of the health effect of retirement depending on the quality of prior work comes also from a research based on German data (Eibich, 2015) and two other British studies, one based on the English Longitudinal Study of Ageing (Matthews, 2014) and the other on the Whitehall II study of British civil servants (Fleischmann et al., 2020). Fleischmann et al. (2020) looked at British civil servants before and after retirement to investigate how this transition affected their mental health (operationalized by GHQ depression scores). Their results show that, generally, people's mental health benefits greatly in the short run after retirement. Interestingly, this improvement is much more evident for workers who have previously been employed in jobs with worse working environment, specifically in jobs with high job demands, low social support and low decision authority (Fleischmann et al., 2020). Matthews (2014) categorized workers as employed in high-quality or low-quality jobs according to the effort-reward imbalance model (Siegrist, 1996). Her results showed that among workers in low-quality jobs, the transition into retirement was associated with decreased depression scores, better self-rated health and better cognitive function. In contrast, among workers in high-quality jobs, retirement was associated with increased depression scores, decreased self-rated health and decreased cognitive function (Matthews, 2014).

Other studies provide support to the hypothesis that retirement negatively affects cognitive function for people in high-quality jobs, as concluded by a recent systematic literature review (Meng et al., 2017) and by subsequent studies adopting instrumental variable techniques to deal with the endogeneity of retirement (Mazzonna & Peracchi, 2017; Celidoni et al., 2017). A possible hypothesis for the mechanisms behind these associations is that retiring from a high complexity/quality jobs may lead to more negative consequences because of the greater social and psychological attachment to these jobs (Finkel et al., 2009). Moreover, the reduction in the cognitive abilities' gap between occupational groups after retirement can also be explained through the "use it or lose it" hypothesis, since the level of mental stimulation between the two groups would become more similar after retirement and the "protective effect" of high employment grade vanishes with retirement (Xue et al., 2018).

Another study conducted in France found an improvement in self-rated health after retirement overall. However, a stronger improvement was observed among workers exposed to poor working conditions before retirement, such as high psychological, high physical demand and low job satisfaction, whereas no change in

self-rated health was found among subjects with high occupational grade, low demands and high job satisfaction (Westerlund et al., 2009).

Using SHARE data, Kalousova & de Leon (2015) found that among workers with low rewards in their jobs, retirement was associated with a significantly lower increase in frailty, a composite indicator of physical functioning, compared to those who remained at work; in contrast, among workers reporting high rewards, the increase in frailty was higher.

Conclusions and Policy Recommendations

This book chapter sets out to provide an overview of the working environment as determinant of retirement and its role as mediator of the health effects of retirement. To summarize, studies show that not just having work in general, but having good work is an important aspect of individuals' health and retirement decisions. With regards to the working environment, mostly positive working conditions (job resources, especially job control, and social support) appear to contribute to individuals' later retirement, but adverse working conditions not necessarily relate to earlier retirement. Indeed, it seems that their influence is buffered when they come combined with the right working environment, characterized by high job control, job resources or social support.

Exposures to good jobs throughout the life-course not only help workers to remain longer at work, but also seem to play a crucial role in determining the size and the direction of the effects of retirement on health. Theoretical ideas provided arguments that the transition into retirement could be detrimental for individuals who had better working conditions, because the protective roles played by the material and immaterial resources associated to high quality and stimulating jobs diminish with retirement. Coherently with such expectations, the review of the literature showed that overall retirement was found to exert positive effects on various health outcomes for those workers who were exposed to more physically and psychologically demanding jobs while null or even negative effects were found among workers exposed to high quality jobs, in particular on cognitive health outcomes. Moreover, postponing retirement was found to cause physical health deterioration in low skilled manual workers in both the UK (Carrino et al., 2020) and Italy (Ardito et al., 2020). A matter of concerns is what will happen when current and future increases in the statutory pension age require the majority of population employed in lower quality jobs to continue working and to postpone retirement.

Despite some inconsistencies emerged in previous literature regarding the definition of which (combination of) work factors matter the most, many have acknowledged that working characteristics are modifiable aspects of the job (Ilmarinen, 2006), and are, as thus, possibly of interest to employers, occupational health professionals and policy advisors. Ilmarinen (2006) argues that improvement of working conditions is one of the essential factors when aiming to improve occupational health. To achieve this, in many cases, approval and help from supervisors might be

relevant. If this is not the case, the question is whether modifications of working conditions are feasible aspects of work improvement. A recent study by Fleischmann et al. (2018) addressed this question by investigating how working conditions changed after diagnose of chronic disease for employed and self-employed older persons. Diagnose of chronic disease could in many cases arguably require adjustments of working conditions to accommodate changing needs, but this might be easier to realize for persons in self-employment (largely responsible for their working conditions themselves), rather than in employment. Results showed that especially physical demands, and to a smaller extent job autonomy, significantly improved (in the short term) for self-employed older workers, compared to employed older workers. This might indicate that work accommodation and modifications of working conditions could help people to remain at work, especially when they are confronted with health impairments. This is particularly relevant considering that an ageing workforce is characterized by a growing proportion of people with chronic conditions and health limitations.

In order to promote longer and healthy working lives, we discuss to which groups to pay attention to and a range of policies that might help to prevent early exit and make longer working lives feasible, even for those in more strenuous jobs.

To begin with, it is crucial to help firms to install and promote "age management" policies. These policies are aimed at modifications of work organization and workplace to meet the needs of ageing working populations. To a large extent, the modification of working conditions is indeed employers' responsibility. Earlier studies show that employers are often hesitant towards older workers, for example, to provide training (Fleischmann & Koster, 2018) or to implement flexibility measures, such as working time and schedule adjustments or working from home at later stage in the career (Lössbroek et al., 2018). It should not be forgotten that in order to improve work sustainability until older ages, workplace interventions already at younger ages might include reducing or eliminating shift work and increasing flexibility in time schedules in order to reduce potentially harmful exposures to psychosocial, ergonomic and environmental conditions. Very importantly, such measures have been shown to be highly successful in making the prospect of working longer more attractive and in increasing the intention to retire later (Moen et al., 2016).

The results regarding the health effect of retirement clearly seem to point to a socio-economic gradient. Lower educated groups of workers, or workers in lower occupational grades should, therefore, be a specific focus of policy. There is evidence of a potential negative health effect of postponing retirement for the most disadvantaged segment of the workforce and pension reforms may involuntarily increase health inequality. As such, policies oriented at enhancing job quality and promoting employment sustainability and health along all the working life are needed in order to enable all workers to prolong work until statutory pensionable age without putting their health at risk.

Moreover, there is the need to better target workers in arduous or hazardous jobs. Several European countries already provide recognition and relaxation of pension rules for these workers identifying them based on a list of conditions/occupations/sectors. However, the very tight conditions make the actual coverage of workers in

"arduous and hazardous jobs" limited and, moreover, about a third of European countries does not provide any form of pension rule relaxation to them (Natali et al., 2016). Since recent pension reforms have largely contributed to reducing the opportunities for an early retirement even in the case of the workers in arduous or hazardous jobs, based on the evidence provided in this chapter, it emerges that these categories should benefit from further special attention.

In conclusion, interventions aimed at prolonging working life and limiting the access to retirement should always be matched with workplace interventions. Such interventions should aim at promoting health monitoring and prevention, improving the work environment and paying particular attention to the differential impact that policy measures may have on different socio-economic groups. This is needed to help older workers in general, and workers most at risk in particular, to remain healthy and active in the labour market while enjoying decent working conditions over their entire life-course.

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