



Mental Wellbeing Among Workers Approaching Retirement: a Scoping Review¹

■ **Anna Amilon²**

Senior researcher, VIVE – The Danish Center for Social Science Research, Work and Later Life, Denmark

■ **Anu Siren**

Professor, Tampere University, Faculty of Social Sciences | Health Sciences, Finland

■ **Mona Larsen**

Project director, VIVE – The Danish Center for Social Science Research, Work and Later Life, Denmark

■ **Helle Holt**

Senior researcher, VIVE – The Danish Center for Social Science Research, Work and Later Life, Denmark

ABSTRACT

Increasing numbers of older workers have to postpone retirement to be eligible for pension income. Therefore, knowledge of how to ensure their mental wellbeing is becoming increasingly salient, especially in Nordic countries, where mental health problems are the most important reason for workers leaving the labor market prematurely. Yet, no systematic overview of what influences older workers' mental wellbeing currently exists. This scoping review aims to build such knowledge and identify gaps in the literature. Employing a multi-faceted search strategy, we identified and reviewed 23 articles. The mental wellbeing of older workers is influenced by (a) working conditions, (b) workers' socio-economic and psychological resources, and (c) uncertainties in the statutory framework. Research gaps include a lack of knowledge on (i) how the interaction between factors at the individual, workplace, and welfare state levels impacts older workers' mental wellbeing, and (ii) the determinants of older workers' mental wellbeing in Nordic countries.

KEYWORDS

Mental wellbeing / retirement age / scoping review / workers approaching retirement / working conditions

Introduction

In the light of population aging and increasing dependency ratios, many countries have adjusted their pension policies to prolong working lives (Fouejieu et al. 2021). Consequently, while many older workers¹ voluntarily remain in the labor force until later ages, increasing numbers of workers have no choice but to postpone retirement in

¹ You can find this text and its DOI at <https://tidsskrift.dk/njwls/index>.

² Corresponding author: Anna Amilon. E-mail: ame@vive.dk.

order to be eligible for public pension income (Boot et al. 2019). Over the past decades, most OECD countries have seen a structural shift in employment from the agricultural and industry sectors toward a growing service sector (OECD 2017a). In parallel, countries have adopted legislative measures to improve the working environment and to protect workers' health and safety (Eurofound 2017). With these changes, employment in physically demanding or hazardous jobs has decreased, and overall, older workers' physical health has improved (OECD 2017b). However, less is known about older workers' mental wellbeing.

Knowledge about the determinants of older workers' mental wellbeing is important for several reasons. Not only does decreased mental wellbeing inherently involve suffering and diminished quality of life for the affected individuals, but it is also a risk factor in relation to older workers leaving the labor market prematurely (Fisher et al. 2016a; Topa et al. 2018), and in relation to negative physical health outcomes, such as musculoskeletal disorders (Bentley et al. 2023), cardiovascular disease, and cancer (Mairey et al. 2022). Thus, as increasing numbers of older workers face the prospect of spending progressively more years in employment, their mental wellbeing is becoming an increasingly salient issue. This is particularly true in Nordic countries, where mental health problems are the primary reason for workers exiting the labor market on disability pension, and where the number of people on disability pension due to mental health problems has increased significantly over the past decades (Eläketurvakeskus 2020; Försäkringskassan 2022; NAV 2022; STAR 2024).

Recent reviews have investigated topics related to older workers' mental wellbeing. For instance, Pilipiec et al. (2021) surveyed the literature that investigates the effects of increasing retirement ages on workers' health, wellbeing, and labor force participation and found that while increasing retirement ages have increased the labor force participation among older workers, evidence regarding the health and wellbeing effects of such policy changes remains scarce and inconclusive. Moreover, a recent scoping review demonstrated that precarious employment has adverse mental health effects, but this review did not consider the situation of workers approaching retirement (Irvine & Rose 2022). However, as noted by Mori et al. (2024), differences between younger and older workers in their reactions to psychological and environmental factors call for research disaggregated by age. Their review of the literature about work engagement among older workers demonstrates that organizations can protect older workers' motivation by promoting intergenerational communication – thereby avoiding age-based stereotypes, discrimination, and inter-generational conflicts. Similarly, Bentley et al. (2023) reviewed literature on occupational health and safety interventions for older workers and found that organizational interventions are more efficient than individual interventions in protecting older workers against psychological injury.

The above-mentioned reviews provide important evidence on how increasing retirement ages impact older workers' labor force participation (Pilipiec et al. 2021), on how interventions can protect older workers' occupational safety (Bentley et al. 2023), and on how interventions can contribute to older workers' work engagement (Mori et al. 2024). However, we have no systematic overview of the evidence base on how various societal domains may influence the wellbeing of older workers. Lain et al. (2019) propose that older workers are influenced by the intersection of the three societal domains: (i) welfare states, (ii) households, and (iii) jobs, and by the degree of precarity in each of these domains. Workers' experience of precarity may be influenced

not only by their current situation, but also by uncertainties regarding the future. As domains intersect, security in one domain can buffer against precarity in other domains. However, Lain et al. (2019) argue that the degree of precarity in all three domains has increased over the past decades due to factors such as retrenchment of the welfare state, work intensification, more employment insecurity in the wake of the 2008–2009 crises, and increasing divorce rates. Given this increasing precarity across societal domains, older workers' mental wellbeing might have deteriorated in recent years. Thus, we wanted our literature review to capture studies that have examined the impact of factors in any of the potentially wide array of societal domains that can affect older workers' mental wellbeing. We endeavored to capture such studies by designing a search strategy that would include studies on the relation between older workers' mental wellbeing and factors in any societal domain, which could include the three societal domains identified by Lain et al. (2019), or other societal domains that might be identified in our inductive review.

By scoping the literature about what influences the mental wellbeing of workers approaching statutory/standard retirement age, we aim to (i) explore and uncover the determinants of older workers' mental wellbeing and (ii) uncover gaps in the current evidence base – thereby providing guidance for future research. While young and older workers may share some determinants of their wellbeing, we argue that there is a need to synthesize knowledge about older workers. Not only do contemporary societies need older workers to remain in the labor market, but also older workers have different professional priorities and health-related needs than younger workers (Eurofound 2014). These differences indicate a need for age-disaggregated workplace interventions and public policies to increase older workers' wellbeing. Thus, a better understanding of the determinants of older workers' mental wellbeing can help policy-makers achieve the goal of prolonging working lives without affecting older workers' mental wellbeing negatively and help workplaces adapt to the demands of the aging workforce.

Method

We conducted a scoping review of the literature about older workers' mental wellbeing. We chose the scoping methodology for three reasons. First, while systematic reviews focus on well-defined questions, specific methods, and quality-assessed studies, our research question is broadly defined and may encompass studies using various designs and methods. Second, the central concepts of our research question, such as 'workers approaching retirement' and 'mental wellbeing', are not easily defined and may vary across national contexts and over time. Hence, studies may be overlooked in systematic searches. Third, the scoping review methodology also aligns with the aims of this study, which were to gauge the state of the art and identify gaps in existing research.

Our review follows the five steps outlined by Arksey and O'Malley (2005). These steps involve: 1. Identifying the relevant research question, 2. Identifying relevant studies, 3. Study selection, 4. Charting the data, and 5. Collating, summarizing, and reporting the results. We describe these steps in further detail in the following sections.



Step 1: Identifying the relevant research question

The aim of this review is to build knowledge of what influences older workers’ mental wellbeing in the light of the past 20 years’ rapidly changing pension policy landscape and the growing importance of mental health problems for early retirement in the Nordic region. Our research question was: What is known from the existing literature about what influences the mental wellbeing of workers approaching statutory or standard retirement age?

Step 2: Identifying relevant studies

To identify relevant studies, we used a search strategy that employed several methods and sources. We conducted a systematic search of electronic databases. Given our interest in capturing determinants of older workers’ mental wellbeing across societal domains, we chose only to include search terms related to the two key elements in our research question: the target group (workers approaching statutory or standard retirement age) and their outcomes (mental wellbeing). The term ‘approaching standard or statutory retirement age’ reflects our aim to include studies on workers who were not yet eligible for receiving state pension, but who were approaching retirement, as this group is likely to be the most affected by changing retirement policies. To identify studies on the element we termed mental wellbeing, our search included studies that concern the general mental wellbeing of older workers, the mental health of older workers, and the emotional and psychological reactions of older workers.

An experienced information specialist helped us identify relevant search terms for the population (e.g., ‘workers approaching retirement’) and outcomes of interest (e.g., ‘wellbeing’) and helped us adapt these terms to each of the databases (as an example, we provide our search strategy for *Academic Search Premier* in Appendix 1). We limited our search to Western countries (EU countries, Andorra, Iceland, Liechtenstein, Monaco, Norway, San Marino, Switzerland, the UK, Canada, the USA, Australia, and New Zealand) and to studies published from January 2000 to June 2023. These restrictions were motivated by pension policy changes having been particularly salient in this period and in these countries. Our search was carried out in 11 databases spanning a wide range of scientific areas. We searched in English and included studies published in English and Scandinavian languages (Danish, Swedish, and Norwegian) in this review. Studies in Danish, Swedish, and Norwegian, as opposed to the other Nordic languages, were included as all authors of this review were proficient in these languages, and because of our interest in the previously identified growing numbers of workers exiting the Scandinavian labor markets on disability pensions due to mental health problems. We present the databases and number of hits for each database in Table 1.

As mentioned, important studies may be overlooked in a systematic search due to difficulties in defining appropriate search terms for central concepts in the research question. Therefore, the systematic search was complemented by: 1. manually searching the reference lists of included studies, 2. hand searching selected Scandinavian-language journals [Journal of Working Life (*Tidsskrift for Arbejdsliv*), Journal of Labour Market and Working Life (*Arbetsmarknad och Arbetsliv*), and Spotlight on Working Life

Table 1 Number of hits by database

Database	Hits	Hits without duplicates
Academic Search Premier	283	262
International Bibliography of the Social Sciences	483	394*
SocIndex	291	182*
PsycInfo	746	574*
EconLit	338	244*
Sociological Abstracts	684	339*
Social Services Abstracts	152	75
Web of Science SSCI	229	130
APA PsycNet	62	14
PubMed	163	75
All databases	3,431	2289

Note: *A few studies that were clearly outside of the geographical region of interest were removed by the information specialist.

(*Søkelys på Arbeitslivet*)], and 3. hand searching the homepages of specific projects that we were familiar with, or became familiar with, via our network or via our search efforts (we list these projects in Appendix 2).

Step 3: Study selection

Given our interest in older workers’ mental wellbeing in the light of rapidly rising retirement ages, we selected studies from Western countries that were published after 2000 and that report on data from 2000 or later (studies including data from both before and after 2000 were included if most of the observations were from after 2000). As the definition of older workers varies across countries and over time (Bentley et al. 2023), we did not impose a particular age restriction on the study population. Rather, we included studies of workers who were defined (by study authors) to be ‘older’ or ‘approaching retirement’ but who had not yet passed statutory retirement age or were not yet eligible to receive public old-age pension.

A relatively large body of literature concerns the health effects of retirement and thus compares the mental wellbeing of retirees to that of workers approaching standard retirement age. We decided not to include such studies for two reasons. First, the focus of this review is on what influences the mental wellbeing of workers approaching retirement rather than on the pros and cons of retirement. Second, as several studies review the literature that compares the mental wellbeing of older workers to that of retirees (see, e.g., Avendano & Berkman 2014; Mazzonna & Peracchi 2017; Motegi et al. 2016), the contribution of including such studies in this scoping review would be limited. In addition, we chose not to include studies that compared the mental wellbeing of different age groups, unless a study explicitly provided insight into factors influencing the mental wellbeing of workers approaching retirement.

Given our interest in the general mental wellbeing of workers approaching retirement, we excluded studies with a narrow focus on the effects of factors such as job loss,

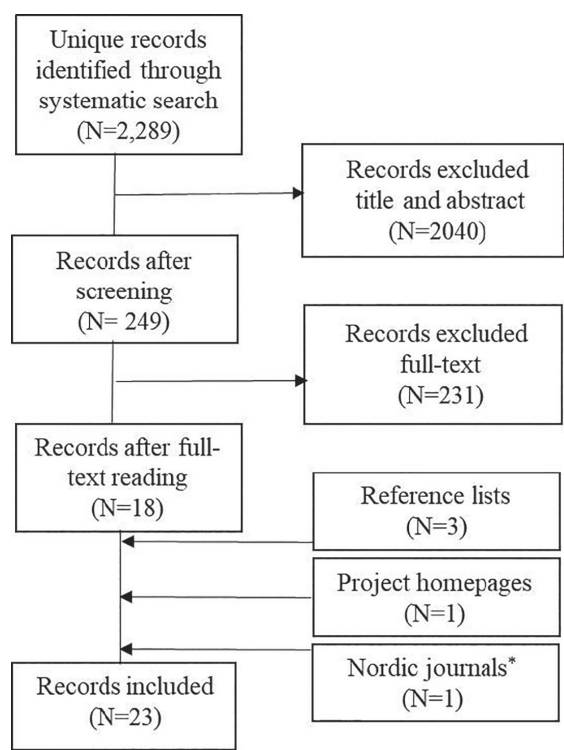


closing of workplaces, or downsizing on older workers’ mental wellbeing. In addition, we excluded studies with a focus on work-related outcomes such as job satisfaction. This exclusion was motivated by the relatively modest correlation between mental wellbeing measures and job satisfaction, for example, as reported in the meta-analysis by Faragher et al. (2005). Moreover, given the richness of the literature focusing on older workers’ job satisfaction, job satisfaction would be scoped more accurately in a review with a specific focus on this outcome and its determinants.

The systematic search yielded 2289 individual studies that were screened based on title and abstract. While all authors participated in the design process, including defining the search strategy and selecting inclusion and exclusion criteria, the screening was chiefly performed by one author. However, as a sensitivity check, a subset (10%) of the articles selected for full-text screening were double screened. This sensitivity check produced inclusion and exclusion results identical to those of the first screening. Moreover, all cases of doubt regarding inclusion or exclusion were resolved through discussions among the authors. A total of 2040 studies did not match our inclusion criteria and were thus excluded from further review. We screened the 249 potentially relevant studies based on full-text reading, which led us to exclude a further 231 studies and thus to the inclusion of 18 studies in our review.

Hand-searching reference lists, selected journals, and project homepages led to the inclusion of five additional studies. Figure 1 presents an overview of the study selection process.

Figure 1 Overview of study selection process.



*Journal of Working Life, Journal of Labour Market and Working Life, and Spotlight on Working Life.

Step 4: Charting the data

We used a standardized data extraction form to extract information from studies. Pre-determined coding categories included author names, publishing year, geographical context, study objective, study population, methodological design, study outcome(s), and main findings in relation to older workers' mental wellbeing. Based on our overview of the main findings, we identified overarching study themes in an iterative process and through discussion among the authors.

Table 2 provides an alphabetical overview of the included studies. All studies were published after 2008, which may reflect a recent growing interest in the segment of older workers due to the increasing policy focus on prolonging working lives. Seventeen of the included studies are based on European data: of these, five studies use data from the Survey of Health, Ageing and Retirement in Europe (SHARE) and thus involve several European countries, six studies are Dutch, two studies are German, and there is one study each from Switzerland, Ireland, the UK, and Denmark. Thus, only one study is from a Nordic country. Five studies are based on data solely from the USA, whereas one study involves data from Europe, the USA, and Japan.

The youngest workers in most of the included studies are 50 years, and the older age limit usually lies around 62–65 years. One study includes workers aged 40 years and older. The vast majority of studies involve the general population, and 21 of the 23 studies are based on quantitative data.

As indicated in Table 2, the most commonly used outcome measures for mental wellbeing were versions of the EURO-D and the CES-D scales.

Step 5: Collating, summarizing, and reporting the results

In reading the studies, we identified three overarching themes in an iterative process: working conditions (16 studies); workers' socioeconomic and psychological resources (eight studies); and uncertainties in the statutory framework (six studies). The identified studies thus investigate how the mental wellbeing of workers approaching retirement is associated with factors at the workplace, individual, and welfare state levels. Five studies included more than one of the themes, and one study included all three themes. We summarize the studies by theme in Table 3 and provide a narrative summary of the main results in the following sections.

Results

Working conditions

A total of 16 studies investigate how working conditions are associated with older workers' mental wellbeing. For expositional purposes, we have divided these studies into three sub-themes (where some studies involve more than one sub-theme). The three sub-themes are physical working conditions (eight studies); psychosocial working conditions (nine studies); and discrepancies between positive and negative factors at work, which we abbreviate to 'discrepancies' (seven studies).



Table 2 Overview of included studies

Authors	Country	Objective	Sample	Design	Main outcome	Main findings, mental wellbeing
Barschkett et al. (2022)	Germany	To analyze the causal effect of an increase in the retirement age on official health diagnoses	627,391 women aged 59 years	Longitudinal	Mood disorders or stress-related diseases	The increase in the retirement age negatively affects mental health.
Choi et al. (2020)	USA	To investigate how personal (self-efficacy) and team (leader equity) factors are associated with mental health	508 50+-year-old workers	Cross-sectional	SF-8	Perceived self-efficacy was a strong predictor of mental health.
De Breijl et al. (2020)	The Netherlands	To identify which work characteristics are associated with mental health outcomes and whether there are educational differences in these associations	1295 workers aged 55 years	Longitudinal	CES-D	High physical demands, low variation in tasks, low autonomy, and high job strain were associated with poorer mental health – in particular among less educated workers.
De Grip et al. (2012)	The Netherlands	To assess the impact of a reform of the Dutch pension system on mental health	7162 male public sector workers born in 1949–1950	Cross-sectional	Mental health, CES-D8	Mental health is reduced among those affected by the reform. The effects are stronger for married workers whose partner has no pension income.
Fisher et al. (2016)	USA	To examine job lock in relation to wellbeing	348 workers aged 62–65 years	Longitudinal	Life satisfaction	Job lock due to money was significantly associated with lower life satisfaction 2 years later.
Froidevaux et al. (2016)	Switzerland	To investigate if mattering mediates the impact of social interactions for retirement planning and life satisfaction	161 workers aged 55+ years	Longitudinal	Satisfaction with Life Scale	Mattering mediated the effects of social support at work on life satisfaction.
Hasselhorn et al. (2020)	Germany	To establish a typology of work exposure and investigate associations between the typology and mental health	6277 socially insured workers born in 1959 or 1965	Cross-sectional and longitudinal	SF-12	Five profiles of work exposure were identified. These profiles exhibited diverging patterns of association with mental health outcomes.

Havermans et al. (2018)	Nether-lands	To assess whether changes in exposure to psychosocial work factors are associated with a change in mental health	5249 workers aged 45–65 years	Longitudinal	SF-12	Less unfavorable exposure to psychosocial work factors was associated with improved mental health.
Henseke (2018)	15 European countries	To present new evidence on the effects of job quality on mental health	13,800–23,100 workers aged 50+ years	Longitudinal	EURO-D	Mental health is associated with changes in job quality.
Hoven et al. (2015)	11 European countries	To investigate indirect effects of socioeconomic position on mental health via stressful work	2798 workers aged 50–64 years	Longitudinal	EURO-D	Effort-reward imbalance and, less consistently, low control mediate the effect of occupational class and occupational status on depressive symptoms.
Jones et al. (2013)	23 European countries	To test whether older workers (aged 55–65 years) differ significantly from younger workers across a range of self-reported job-related indicators including mental health	17,459 workers aged 15–35, 36–54, and 55–65 years	Cross-sectional	Stress, sleeping problems, anxiety, and irritability	Older workers are significantly more likely to perceive adverse mental health outcomes. The magnitude of this difference is substantial.
Lai-Bao et al. (2020)	10 European countries	To examine the influence of effort reward imbalance (ERI) at work on suicidal ideation and the mediating effect of depressive symptoms	4963 workers aged 50+ years without suicidal ideation at baseline	Longitudinal	Suicidal ideation	A significantly higher incidence of suicidal ideation was related with high effort and low reward, respectively. Depressive symptoms mediated a modest proportion of the total association between ERI and suicidal ideation.
Lain and Phillipson (2019)	UK	To develop a theoretical model for understanding precarity as a lived experience – this model is then illustrated using qualitative research.	22 hospitality workers aged 50–67 years	Qualitative	Experiencing precarity	Older workers experienced a sense of ontological precarity because they worried about the long-term sustainability of their jobs. Household circumstances either reinforced, or acted as a buffer against, precarity.

(Continued)



Table 2 (Continued)

Authors	Country	Objective	Sample	Design	Main outcome	Main findings, mental wellbeing
Marchiondo et al. (2020)	USA	To investigate whether and how workplace incivility relates to wellbeing outside of work, among both targeted employees and their partners	598 employees aged 51+ years and their partners	Longitudinal	Life satisfaction	Workplace incivility related to decrements in targets' affective wellbeing, which in turn was associated with life dissatisfaction. Workplace incivility also predicted declines in partner wellbeing.
McCarthy et al. (2017)	Ireland	To examine the association between job characteristics (job demands and job control) and mental health while controlling for personality traits	1025 workers aged 50–69 years	Cross-sectional	CES-D	Job demands are significant positive predictors of symptoms of depression and anxiety. The inverse was true for job control variables and symptoms of depression.
Mezuk et al. (2011)	USA	To examine the relationship between job strain and depression	2902 workers aged 50+ years	Longitudinal	Depressive symptoms	High job strain was associated with elevated depressive symptoms relative to low job strain. High job stress combined with high job satisfaction and low job stress combined with low job satisfaction were also associated with depressive symptoms, but to a lesser degree.
Mulders et al. (2021)	The Netherlands	To study the different ways in which mid- and late-career workers respond to increasing retirement ages	1351 workers aged 40–66 years	Cross-sectional	Negative emotions about working longer	Employees have fewer negative reactions to working longer when HR facilities are accessible and accommodative, when social norms support prolonged employment, and when employees do not experience age discrimination.

Munnell et al. (2021)	USA	To explore how workers use non-traditional jobs (i.e., jobs that do not provide access to retirement plans and health insurance)	Workers aged 50–62 years	Longitudinal	Depression	Workers who are consistently in non-traditional jobs are more likely to be depressed.
Olivera and Ponomarenko (2017)	18 European Countries	To study the effects of pension insecurity on subjective wellbeing	15,389 workers aged 50+ years	Longitudinal	Life satisfaction	There was a stable and negative association between pension insecurity and subjective wellbeing.
Siegrist et al. (2012)	15 European countries, USA and Japan	To test associations of psychosocial work stress (effort-reward imbalance; low control) with depressive symptoms	14,236 workers aged 50–64 years	Cross-sectional and longitudinal	CES-D and EURO-D	Odds ratios of depressive symptoms among people experiencing high work stress were elevated compared to those with low or no work stress.
Solinge and Henkens (2017)	The Netherlands	To study older workers' emotional reactions to reforms that induce them to extend their working lives	6800 workers aged 60–65 years	Cross-sectional	Anger and worry	Anger and worry are more prevalent among older workers in more demanding jobs, with less favorable personal (health, wealth) and social (no partner support) resources.
Tufte et al. (2008)	Denmark	To determine how employees understand the concept of 'mental exhaustion' and which working conditions they associate with this concept	83 workers in the long-term care sector aged 50+ years	Qualitative	Experience of mental exhaustion	Employees use the concept to describe a number of different experiences, reactions, and states that relate to their working conditions.
Vanaian et al. (2022)	The Netherlands	To examine how four newly diagnosed chronic health conditions affect older workers' vitality and worries about mental functional ability	1894 workers aged 60–62 years	Longitudinal	Vitality (measured via the SF-12), worries about mental ability	Being newly diagnosed with mentally disabling conditions increased worries about mental functioning.

Notes: USA, United States of America; UK, United Kingdom; CES-D, Center for Epidemiologic Studies Depression Scale; SF-12, Short Form Health Survey; EURO-D, European depression scale.



Table 3 Overview of study themes.

	Working conditions (16 studies):			Socioeconomic or psychological factors	Uncertainties
	Physical	Psychosocial	Discrepancies		
Barschkett et al. (2022)					✓
Choi et al. (2020)				✓	
De Breij et al. (2020)	✓	✓	✓		
De Grip et al. (2012)				✓	✓
Fisher et al. (2016)				✓	
Froidevaux et al. (2016)		✓			
Hasselhorn et al. (2020)	✓	✓			
Havermans et al. (2018)		✓			
Henseke (2018)	✓	✓			
Hoven et al. (2015)			✓		
Jones et al. (2013)	✓	✓			
Lai-Bao et al. (2020)			✓		
Lain and Phillipson (2019)	✓			✓	✓
Marchiondo et al. (2020)		✓			
Mc Carthy et al. (2017)			✓		
Mezuk et al. (2011)	✓		✓		
Mulders et al. (2021)		✓			✓
Munnell et al. (2021)				✓	
Olivera and Ponomarenko (2017)				✓	✓
Siegrist et al. (2012)			✓		
Solinge and Henkens (2017)	✓			✓	✓
Tufte et al. (2008)	✓	✓	✓		
Vanajan et al. (2022)				✓	
Number of studies	8	9	7	8	6



Physical working conditions

Eight studies find that physical working conditions are important, not only for older workers' physical wellbeing, but also for their mental wellbeing. For instance, Jones et al. (2013) find that adverse physical working conditions (e.g., noise, vibration, extreme temperature, smoke, and radiation), adverse ergonomic working conditions (e.g., painful positions, carrying heavy loads, and repetitive movements), and having to work at a very high speed, to tight deadlines and having insufficient time to get the job done have detrimental effects on older workers' mental health. Moreover, workers in 'poor quality' jobs (e.g., jobs involving the lifting of heavy loads, shiftwork, and high work intensity) had worse mental health than those with more favorable working conditions (Hasselhorn et al. 2020). Qualitative studies indicate that workers in physically demanding jobs worry about whether they will be able to continue working until they reach the state pension age (Lain & Phillipson 2019). In addition, among workers in the Danish long-term care sector, continuously having insufficient time to complete the necessary tasks and having to work at a very high speed leads to reduced mental wellbeing (Tufte et al. 2008).

In parallel, some studies find that advantageous physical working conditions have positive effects on older workers' mental wellbeing. For instance, Henseke (2018) finds that better job quality (including absence of physical work demands and a low degree of time pressure) is associated with a reduced risk of depression.

Adverse working conditions are particularly salient and have the largest impact on older workers' mental wellbeing in the lower occupational classes. For instance, workers in the lower occupational classes, manual workers, and workers with unusual working hours or shiftwork are more likely to worry about their ability to keep up physically in their jobs as compared to workers belonging to the higher occupational classes and workers with regular working hours (De Breij et al. 2020; Solinge & Henkens 2017). Similarly, being in a full-time blue-collar occupation is associated with high job strain, which in turn is associated with elevated depressive symptoms (Mezuk et al. 2011).

Psychosocial working conditions

Psychosocial working conditions encompass a broad range of concepts, including organizational justice, workplace social capital and culture and behaviors of supervisors, co-workers, customers, and clients (Rugulies 2019). The nine included studies demonstrate this diversity by investigating how a wide range of psychosocial working conditions influence older workers' mental wellbeing.

For instance, findings show that positive co-worker relationships affect wellbeing positively, whereas negative co-worker relationships have a negative impact. Marchiondo et al. (2020) find that higher levels of incivility at work are negatively related to affective wellbeing among employed older couples. Similarly, almost never getting assistance from colleagues or superiors (Jones et al. 2013) and lack of support and understanding from managers (Tufte et al. 2008) influence older workers' mental health negatively.

Conversely, Froidevaux et al. (2016) show in a mediation analysis that social support at work has a positive effect on mattering (i.e., the feeling that one makes a difference in the world), which in turn has a positive impact on life satisfaction. Similarly,



negative emotional reactions to increasing retirement ages are softened by a positive psychosocial work environment, that is, an environment without age discrimination, with accessible accommodative HR facilities, and in which the social norms support prolonged employment (Mulders et al. 2021). Moreover, improvements in, for example, autonomy, support, and administrative justice are associated with improved mental health (Havermans et al. 2018), and having high autonomy at work is associated with fewer depressive symptoms among older workers (De Breij 2020).

Two studies combine various psychosocial working conditions to measure their aggregated impact on mental wellbeing. First, Henseke (2018) uses data from SHARE to investigate the effects of job quality on mental health among older European workers. His measure of job quality includes intrinsic job quality and job insecurity – each based on a range of questions. Intrinsic job quality combines information about the opportunity to develop new skills, discretion over how to do the work, availability of support in difficult situations, and time pressure as well as information on skill level. Job insecurity combines information on perceptions of job security and career prospects as well as information on the type of contract (fixed term vs. open ended) and the predicted risk of unemployment. The findings suggest that better jobs (i.e., with higher intrinsic job quality and lower job insecurity) are associated with better mental health among older workers when accounting for unobserved heterogeneity, selection bias, and reversed causality.

Second, a somewhat different approach is taken by Hasselhorn et al. (2020), who use German survey data to construct a typology for work exposure based on nine indices. The indices include information on influence at work, the social environment at work (e.g., support from colleagues), quality of leadership, participation in continued education, prospects (e.g., risk of losing one's job and promotion prospects), and earnings. They identify five work-exposure profiles and find that work-exposure profiles with a high degree of unfavorable working conditions had worse mental health than profiles with favorable working conditions.

Discrepancies

Theoretical models suggest that detrimental health effects occur when there is a discrepancy between positive and negative aspects of psychosocial or physical working conditions. For instance, Karasek's (1979) demand-control (job strain) model of work postulates that it is the combination of high cognitive or physical occupational demands on the one hand and low decisional latitude, low control, or low rewards on the other hand that drives the association with poor mental health. Another model, the effort-reward imbalance model, claims that an imbalance between high efforts spent and low rewards received adversely affects health (Siegrist et al. 2004). Seven studies of older workers' mental wellbeing use these models as a point of departure. Generally, these studies demonstrate that discrepancies are indeed associated with reduced mental wellbeing among workers approaching retirement.

For instance, De Breij et al. (2020) find that the combination of high demand and high control is associated with less depression. Mezuk et al. (2011) analyze the association between job strain – that is, high job stress and low job satisfaction – and depressive symptoms among older workers and find that high job strain is associated with elevated depressive symptoms, relative to low job strain. In addition, high job stress combined

with high job satisfaction, and low job stress combined with low job satisfaction are also associated with elevated depressive symptoms, although to a lower degree than for high job strain. Similarly, workers experiencing high quantitative and cognitive job demands are more likely to show symptoms of depression and anxiety, whereas workers who have influence at work and experience possibilities for development are less likely to show depressive symptoms (Mc Carthy et al. 2017). Lastly, discrepancies between number of tasks and allocated time to complete them leads to reduced mental wellbeing among workers in the Danish long-term care sector (Tufte et al. 2008).

Siegrist et al. (2012) investigate effort-reward imbalance based on data from the USA, Japan, and a range of European countries. They find elevated odds ratios of depressive symptoms among older workers experiencing high work stress (defined as either effort-reward imbalance or low job control) compared to older workers experiencing low or no work stress. Similarly, Lai-Bao et al. (2020) find that a high effort-reward imbalance is associated with a significantly higher incidence of suicidal ideation among older workers. Their results show that effort-reward imbalance is particularly detrimental for women as well as for those with low and medium levels of education or high levels of income.

Hoven et al. (2015) investigate if effort-reward imbalance and low control mediate the role of occupational class and occupational status on depressive symptoms. They find that the lower the occupational status or class, the higher the risk of effort-reward imbalance or low control. Moreover, effort-reward imbalance and low control are associated with a higher risk of depressive symptoms.

Workers' socioeconomic and psychological resources

Eight of the identified studies show that older workers' socioeconomic and psychological characteristics and resources are important for their mental wellbeing. For instance, an individual's own or a partner's financial resources constitute a buffer toward adverse mental health among older workers (see, e.g., De Grip et al. 2012; Lain & Phillipson 2019; Olivera & Ponomarenko 2017; Solinge & Henkens 2017) – potentially because individuals or couples with more wealth have more options in terms of early retirement than their less wealthy counterparts do. Moreover, workers with financial resources are less likely to experience job lock, which is negatively associated with mental health (Fisher et al. 2016).

Similarly, socioeconomic and demographic characteristics, such as gender, education, and marital status are also associated with older workers' mental health. Munnell et al. (2021) find that women, non-whites, people with low levels of education, and singles are overrepresented among non-traditional jobholders – who in turn are more likely to be depressed than older workers in traditional jobs.

In addition to older workers' socioeconomic situation, their psychological profile may influence their mental health. For instance, Choi et al. (2020) report a positive association between older workers' self-efficacy and engagement and their mental health. However, workers with higher cognitive abilities experience a stronger negative association between pension insecurity and life satisfaction – potentially due to them being more aware of the negative consequences of the changing retirement legislation (Olivera & Ponomarenko 2017).



Workers' physical resources, for example, in terms of physical health, also influence their mental wellbeing. For instance, older workers with more chronic health conditions, and who feel that their health conditions limit their work performance, are more likely than workers in good health to be angry, or to worry about keeping up physically and mentally in their jobs (Solinge & Henkens 2017; Vanajan et al. 2022). Furthermore, older workers who have recently been diagnosed with a chronic health condition experience decreased vitality and increased health-related worries (Vanajan et al. 2022). Similarly, qualitative studies demonstrate that workers in poor health worry about losing their jobs due to their problems, forcing them to conceal their bad health at work (Lain & Phillipson 2019).

Uncertainties in the statutory framework

Six studies investigate the influence of changes to the statutory framework (i.e., retirement policy) on the mental wellbeing of workers. Results show that uncertainties in the statutory framework for retirement age and pension income influence the mental wellbeing of older workers negatively. Thus, workers facing increasing statutory retirement ages experience a strong deterioration in their mental health (Barschkett et al. 2022; De Grip et al. 2012) and react with negative emotions such as anger and worry (Lain & Phillipson 2019; Mulders et al. 2021; Solinge & Henkens 2017). Negative emotions, as a response to increasing retirement ages, are associated with personal resources and working conditions. In particular, workers are more likely to worry about their ability to keep up physically and mentally in their jobs if they have limited accumulated wealth, jobs that are more demanding, longer career duration, or if they work unusual hours or in shifts (Solinge & Henkens 2017). Women worry more about their ability to keep up physically in their jobs than men (ibid). Qualitative research among older female workers in physically demanding occupations in the UK supports these quantitative findings by demonstrating that older female workers in bad health and who are single (and thus rely on one income) are particularly concerned about being able to keep up in their jobs until the (increasing) state pension age (Lain & Phillipson 2019).

Not only actual changes to retirement legislation influence older workers' mental wellbeing negatively – expected reforms have a similar effect. Thus, workers who expect that the government will reduce their pensions, or increase the statutory retirement age, have a lower subjective wellbeing, or are more likely to be diagnosed with a stress-related or affective disorder than workers who do not hold such expectations (Barschkett et al. 2022; Olivera & Ponomarenko 2017). In particular, such expectations have a negative effect on the life satisfaction among workers who are relatively poor (Olivera & Ponomarenko 2017).

Discussion

This scoping review investigated what is known from the existing literature about what influences the mental wellbeing of workers approaching statutory or standard retirement age. Our interest in this subject is motivated by the growing need to facilitate and encourage older workers' labor market participation to achieve the goal of prolonging

working lives. The large and increasing numbers of workers who are leaving the labor market on disability pension due to mental health reasons throughout the Nordic region suggest that ensuring mental wellbeing would be an important component in any efforts to prolong working lives. We identified 23 studies that focus on how working conditions, workers' socioeconomic and psychological resources, and uncertainties in the statutory framework – or combinations of these factors – influence older workers' mental wellbeing. Thus, this scoping review demonstrates that factors at the individual, workplace, and welfare state level impact older workers' mental wellbeing.

While such factors potentially influence the wellbeing of all workers (regardless of age), older workers may be particularly susceptible to them for a number of reasons. First, younger workers facing increasing retirement ages have the opportunity to adjust by increasing their level of savings, whereas older workers do not have sufficient time to undertake such adjustments (Olivera & Ponomarenko 2017). Second, poorer opportunities for being re-hired and for training may prevent older workers from transferring to a better job, should they experience adverse working conditions (Charni 2022; Picchio 2021). Third, older workers have different work-related priorities and health needs compared to their younger counterparts (Eurofound 2014). Therefore, a particular focus on older workers' mental wellbeing – from firms and policymakers alike – is warranted.

At the individual level, a wide range of factors influence older workers' mental wellbeing. These factors include demographic characteristics such as gender and ethnicity (e.g., Munnell et al. 2021; Lain & Phillipson 2019), socioeconomic characteristics such as education, wealth, and marital status (e.g., De Grip et al. 2012; Fisher et al. 2016), and health (e.g., Solinge & Henkens 2017; Vanajan et al. 2022). In general, workers with less resources (e.g., with less wealth, lower levels of education, or poorer health) are more susceptible to experiencing adverse consequences of detrimental working conditions and are less able to cope with retrenchments to retirement policy (De Grip et al. 2012; Lain & Phillipson 2019; Olivera & Ponomarenko 2017; Solinge & Henkens 2017). Consequently, workplaces and policymakers wishing to protect older workers' mental wellbeing should consider this heterogeneity, and in particular focus on the more vulnerable older workers when making efforts to improve working conditions or policies.

At the workplace level, studies demonstrate that psychosocial working conditions (e.g., Henseke 2018; Marchiondo et al. 2020; Mulders et al. 2021) as well as physical working conditions (e.g., Hasselhorn et al. 2020; Jones et al. 2013) are important for workers' mental wellbeing. Furthermore, studies show that discrepancies at work – be it between effort and reward (e.g., Siegrist et al. 2012; Lai-Bao et al. 2020), or between demand and control (e.g., Mc Carthy et al. 2017; Mezuk et al. 2011) – influence older workers' mental wellbeing detrimentally.

While occupational medicine literature has confirmed the existence of a relationship between working conditions and the wellbeing of workers in general (Leka & Jain 2010), this scoping review demonstrates that similar associations are found in the group of older workers, and that the negative impact of adverse working conditions extends to their mental wellbeing (and not only to their job-satisfaction). Thus, this scoping review demonstrates that workplaces play an important role for older workers' mental wellbeing and consequently for achieving the goal of prolonging working lives.

Turning to the welfare state level, relatively few studies investigate the impact of uncertainties in the statutory framework on older workers' mental wellbeing.



Nevertheless, those studies that do investigate such matters show that increasing retirement ages or decreasing pension payments influence older workers' mental wellbeing negatively (Barschkett et al. 2022; De Grip et al. 2012; Solinge & Henkens 2017). In addition to the actual changes to retirement ages and pension incomes, the high degree of uncertainty implied by frequent changes to retirement systems also influences older workers' mental wellbeing negatively (Olivera & Ponomarenko 2017). Although increasing retirement ages may be necessary to achieve sustainable pension systems, our results show that welfare states can contribute to older workers' mental wellbeing by reducing the degree of uncertainty – for instance by avoiding making frequent statutory changes in the pension area, or by giving ample advance notice of statutory changes to come.

While only five studies investigate more than one theme and only one of those studies investigates all three of the themes (working conditions; workers' socioeconomic and psychological resources; and uncertainties in the statutory framework), the studies find that the three levels represented by the themes – workplace, individual, and welfare state – interact and that uncertainty or precarity at one level can be counteracted by security or resources at another level (Lain & Phillipson 2019; Solinge & Henkens 2017). These results are in line with the theoretical model proposed by Lain et al. (2019), which suggests that workers' experience of precarity is determined in the intersection of jobs, households and welfare states. Moreover, this review demonstrates that older workers' socioeconomic and psychological resources are important protective factors that may prevent adversities at the household, workplace, and welfare state level from having detrimental consequences on their mental wellbeing. As such, the theoretical model proposed by Lain et al. (2019) may benefit from the inclusion of individual level resources as a buffer against household, workplace, and welfare state precarity.

Strengths and limitations

Strengths of this scoping review include the comprehensive search strategy that was adapted to each database by an experienced information specialist – a further strength being the broad set of multi-disciplinary databases that were included in the search. Moreover, the database search was complemented with hand searching the included studies' reference lists as well as selected Scandinavian-language journals and project homepages. This strategy minimized the risk of excluding relevant studies and assured that our review includes many different study types and methodologies encompassing the essential literature. A limitation to this review is that the study selection was chiefly done by one author – although a sensitivity check pointed towards agreement across authors in the classification of studies. Moreover, all cases of doubt regarding inclusion or exclusion were resolved through discussions among the authors.

Conclusion and implications

Despite the growing interest in prolonging working lives and increasing labor market participation of older workers, this review identified relatively few studies that investigate what may influence older workers' mental wellbeing. The identified studies mainly

investigate how working conditions influence older workers' mental wellbeing, whereas fewer studies investigate the influence of factors at the individual or welfare state level. In particular, we identified four important gaps in the current evidence base.

First, although studies find that single older workers are in a more vulnerable situation than coupled ones (Lain & Phillipson 2019), no study focused on the association between older workers' family situation and their mental wellbeing. However, research outside the scope of this review shows that workers' retirement decisions and their mental wellbeing in retirement can be influenced by their partnership status and by the potential insecurities that accompany partnership, such as the risk of divorce (Moffatt & Heaven 2017). In the longer run, having a partner is a decisive factor for the mental wellbeing of older adults (Lewin 2017; Wright & Brown 2017). With increasing divorce rates among older adults (Brown & Lin 2012), investigating the impact of partnership status and changes therein on older workers' mental wellbeing is an important path for future research.

Second, our knowledge about how statutory changes and related uncertainties influence the mental wellbeing of older workers is limited to only few countries and cultures. Three of the six studies investigating the associations between older workers' mental wellbeing and changes in the statutory framework were based on data from the Netherlands. However, the emotional and mental responses to such changes may vary significantly across cultural contexts – for example, as indicated by the large and recurring strikes against pension reforms in France in the spring of 2023 (Breedon 2023). Thus, future research should seek to investigate how these responses to statutory changes may vary across countries and cultures.

Third, in spite of mental health problems being the primary reason for disability pension receipt in the Nordic countries, we identified only one study on older workers' mental wellbeing carried out in this region. Thus, research furthering our understanding of factors influencing older workers' mental wellbeing in the Nordic countries is urgently needed.

Fourth, only one study took a holistic approach by simultaneously investigating factors at the individual, workplace and welfare state levels. However, as societal domains interact, a beneficial situation in one domain can counteract a detrimental situation in another (Lain et al. 2019). Therefore, future studies should investigate how the interaction between factors at the individual, household, workplace, and welfare state levels influence older workers' mental wellbeing.

Acknowledgements

This work was supported by Velliv Foreningen, (grant number 21-0887).

References

- Arksey, H. & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology* 8(1): 19–32. <https://doi.org/10.1080/1364557032000119616>
- Avendano, M. & Berkman, L. F. (2014). Labor markets, employment policies and health. *Social Epidemiology*: 182–233.

- Barschkett, M., Geyer, J., Haan, P. & Hammerschmid, A. (2022). The effects of an increase in the retirement age on health – Evidence from administrative data. *The Journal of the Economics of Ageing* 23: 100403. <https://doi.org/10.1016/j.jeoa.2022.100403>
- Bentley, T., Onnis, L., Vassiley, A., Farr-Wharton, B., Caponecchia, C., Andrew, S., O'Neill, S., Neto, A., Huron, V. & Green, N. (2023). A systematic review of literature on occupational health and safety interventions for older workers. *Ergonomics* 66(12): 1968–1983. <https://doi.org/10.1080/00140139.2023.2176550>
- Boot, C. R. L., Scharn, M., Van der Beek, Allard J., Andersen, L. L., Elbers, C. T. M., & Lindeboom, M. (2019). Effects of early retirement policy changes on working until retirement: Natural experiment. *International Journal of Environmental Research and Public Health* 16(20): 3895. <https://doi.org/10.3390/ijerph16203895>
- Breeden, A. (2023). Why so many people in France are protesting over pensions. *New York Times*, 23 March.
- Brown, S. L. & Lin, I.-F. (2012). The gray divorce revolution: Rising divorce among middle-aged and older adults, 1990–2010. *The Journals of Gerontology: Series B* 67(6): 731–741. <https://doi.org/10.1093/geronb/gbs089>
- Charni, K. (2022). Do employment opportunities decrease for older workers? *Applied Economics* 54(8): 937–958. <https://doi.org/10.1080/00036846.2021.1970711>
- Choi, M. S., Dabelko-Schoeny, H., Lee, M. Y. & Bunger, A. C. (2020). Does self-efficacy and team leader equity matter for older workers' mental health? *Gerontologist* 60(6): 996–1004. <http://dx.doi.org/10.1093/geront/gnz191>
- De Breij, S., Huisman, M. & Deeg, D. J. H. (2020). Work characteristics and health in older workers: Educational inequalities. *PLoS One* 15(10): e0241051. <https://doi.org/10.1371/journal.pone.0241051>
- De Grip, A., Lindeboom, M. & Montizaan, R. (2012). Shattered dreams: The effects of changing the pension system late in the game. *The Economic Journal* 122(559): 1–25. <https://doi.org/10.1111/j.1468-0297.2011.02486.x>
- Eläketurvakeskus (2020). *Psykisk ohälsa allmannaste orsaken till sjukpensionering*. [Mental health problems are the most common reason for being on disability pension]. <https://www.etk.fi/sv/aktuellt/psykisk-ohalsa-allmannaste-orsaken-till-sjukpensionering/> (2024-03-01).
- Eurofound (2014). *Work Preferences after 50*. Publications Office of the European Union, Luxembourg.
- Eurofound (2017). *Sixth European Working Conditions Survey – Overview report* (2017 update). Publications Office of the European Union, Luxembourg.
- Faragher, E. B., Cass, M. & Cooper, C. L. (2005). The relationship between job satisfaction and health: a meta-analysis. *Occupational & Environmental Medicine* 62(2): 105–112. <https://doi.org/10.1136/oem.2002.006734>
- Fisher, G. G., Chaffee, D. S. & Sonnega, A. (2016a). Retirement timing: A review and recommendations for future research. *Work, Aging and Retirement* 2(2): 230–261. <https://doi.org/10.1093/workar/waw001>
- Fisher, G. G., Ryan, L. H., Sonnega, A. & Naudé, M. N. (2016). Job lock, work, and psychological well-being in the United States. *Work, Aging and Retirement* 2(3): 345–358. <http://dx.doi.org/10.1093/workar/waw004>
- Fouejieu, A. P., Kangur, A., Martinez, S. R. & Soto, M. (2021). *Pension Reforms in Europe: How far have we come and gone?* Washington, DC: IMF: International Monetary Fund.
- Froidevaux, A., Hirschi, A. & Wang, M. (2016). The role of mattering as an overlooked key challenge in retirement planning and adjustment. *Journal of Vocational Behavior* 94: 57–69. <http://dx.doi.org/10.1016/j.jvb.2016.02.016>
- Försäkringskassan (2022). *Socialförsäkringen i siffror*. [Social Insurance in Numbers]. Stockholm: Försäkringskassan.

- Hasselhorn, H. M., Stiller, M., du Prel, J. & Ebener, M. (2020). Work profiles of older employees in Germany: Results from the lidA-cohort study. *BMC Public Health* 20(1):1–14. <http://dx.doi.org/10.1186/s12889-020-09542-3>
- Havermans, B.M., Boot, C. R., Hoekstra, T., Houtman, I. I., Brouwers, E. P., Anema, J. R. & van der Beek, A. J. (2018). The association between exposure to psychosocial work factors and mental health in older employees, a 3-year follow-up study. *International Archives of Occupational and Environmental Health* 91: 57–66. <https://doi.org/10.1007/s00420-017-1261-8>
- Henseke, G. (2018). Good jobs, good pay, better health? The effects of job quality on health among older European workers. *European Journal of Health Economics* 19(1): 59–73. <https://doi.org/10.1007/s10198-017-0867-9>
- Hoven, H., Wahrendorf, M. & Siegrist, J. (2015). Occupational position, work stress and depressive symptoms: A pathway analysis of longitudinal SHARE data. *Journal of Epidemiology and Community Health* 69(5): 447–452. <http://dx.doi.org/10.1136/jech-2014-205206>
- Irvine, A. & Rose, N. (2022). How does precarious employment affect mental health? A scoping review and thematic synthesis of qualitative evidence from western economies. *Work, Employment and Society* 09500170221128698. <http://dx.doi.org/10.1177/09500170221128698>
- Jones, M. K., Latreille, P. L., Sloane, P. J. & Staneva, A. V. (2013). Work-related health risks in Europe: Are older workers more vulnerable? *Social Science and Medicine* 88: 18–29. <http://dx.doi.org/10.1016/j.socscimed>
- Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly* 285–308. <https://doi.org/10.2307/2392498>
- Lai-Bao, Z., Yao, W., Yan, Z., Giron, M. S. T., Pei, J. & Wang, H. (2020). Impact of effort reward imbalance at work on suicidal ideation in ten European countries: The role of depressive symptoms. *Journal of Affective Disorders* 260: 214–221. <http://dx.doi.org/10.1016/j.jad.2019.09.007>
- Lain, D., Airey, L., Loretto, W. & Vickerstaff, S. (2019). Understanding older worker precarity: The intersecting domains of jobs, households and the welfare state. *Ageing and Society* 39(10): 2219–2241. <https://doi.org/10.1017/S0144686X18001253>
- Lain, D. & Phillipson, C. (2019). Extended work lives the rediscovery of the ‘disadvantaged’ older worker. *Generations Journal* 43(3): 71–77.
- Leka, S. & Jain, A. (2010). *Health Impact of Psychosocial Hazards at Work: An Overview*. Geneva: World Health Organization.
- Lewin, A. C. (2017). Health and relationship quality later in life: A comparison of living apart together (LAT), first marriages, remarriages, and cohabitation. *Journal of Family Issues* 38(12): 1754–1774. <https://doi.org/10.1177/0192513X16647982>
- Mairey, I., Rosenkilde, S., Klitgaard, M., Borring & Lau T. C. (2022). *Sygdomsbyrden i Danmark – sygdomme*. [The burden of disease in Denmark – diseases]. Copenhagen: Sundhedsstyrelsen.
- Marchiondo, L. A., Fisher, G. G., Cortina, L. M. & Matthews, R. A. (2020). Disrespect at work, distress at home: A longitudinal investigation of incivility spillover and crossover among older workers. *Work, Aging and Retirement* 6(3): 153–164. <http://dx.doi.org/10.1093/workar/waaa007>
- Mazzonna, F. & Peracchi, F. (2017). Unhealthy retirement? *Journal of Human Resources* 52(1): 128–151. <https://doi.org/10.3368/jhr.52.1.0914-6627R1>
- Mc Carthy, V. J., Cronly, J. & Perry, I. J. (2017). Job characteristics and mental health for older workers. *Occupational Medicine* 67(5): 394–400. <http://dx.doi.org/10.1093/occmed/kqx066>

- Mezuk, B., Bohnert, A. S. B., Ratliff, S. & Zivin, K. (2011). Job strain, depressive symptoms, and drinking behavior among older adults: Results from the health and retirement study. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences* 66B(4): 426–434. <http://dx.doi.org/10.1093/geronb/gbr021>
- Moffatt, S. & Heaven, B. (2017). ‘Planning for uncertainty’: Narratives on retirement transition experiences. *Ageing and Society* 37(5): 879–898. <http://dx.doi.org/10.1017/S0144686X15001476>
- Mori, K., Odagami, K., Inagaki, M., Moriya, K., Fujiwara, H. & Eguchi, H. (2024). Work engagement among older workers: a systematic review. *Journal of Occupational Health* 66(1):1–22. <http://dx.doi.org/10.1093/OCCUH/uiad008>
- Motegi, H., Nishimura, Y. & Terada, K. (2016). Does retirement change lifestyle habits? *Japanese Economic Review* 67(2): 169–191. <http://dx.doi.org/10.1111/jere.12104>
- Mulders, J., Henkens, K. & van Dalen H. P. (2021). Employees’ emotional, cognitive, and behavioral responses to increasing statutory retirement ages. *BioMed Research International* 1–10. <http://dx.doi.org/10.1155/2021/6645271>
- Munnell, A., Sanzenbacher, G. T. & Walters, A. N. (2021). How do older workers use nontraditional jobs? *Journal of Pension Economics and Finance* 20(3): 374–392. <http://dx.doi.org/10.1017/S1474747220000086>
- NAV (2023). *Utviklingen i uførediagnoser per 31. Desember 2017*. [The development in disability diagnoses as of 31 December 2017]. Oslo: Arbejds- og Velferdsdirektoratet/ Statistikkseksjonen.
- OECD (2017a). *OECD Economic Outlook*. 1(101). Paris: OECD Publishing.
- OECD (2017b). *Pensions at a Glance 2017: OECD and G20 Indicators*. Paris: OECD Publishing.
- Olivera, J. & Ponomarenko, V. (2017). Pension insecurity and wellbeing in Europe. *Journal of Social Policy* 46(3): 517–542. <https://doi.org/10.1017/S0047279416000787>
- Picchio, M. (2021). Is training effective for older workers? *IZA World of Labour* 2021:121. <http://dx.doi.org/10.15185/izawol.121.v2>
- Pilipiec, P., Groot, W. & Milena P. (2021). The effect of an increase of the retirement age on the health, well-being, and labor force participation of older workers: A systematic literature review. *Journal of Population Ageing* 14(2): 271–315. <https://doi.org/10.1007/s12062-020-09280-9>
- Rugulies, R. (2019). What is a psychosocial work environment? *Scandinavian Journal of Work, Environment and Health* 45(1): 1–6. <http://dx.doi.org/10.5271/sjweh.3792>
- Siegrist, J., Lunau, T., Wahrendorf, M. & Dragano, N. (2012). Depressive symptoms and psychosocial stress at work among older employees in three continents. *Globalization and Health* 8(1): 1–8. <https://doi.org/10.1186/1744-8603-8-27>
- Siegrist, J., Starke, D., Chandola, T., Godin, I., Marmot, M., Niedhammer, I. & Peter, R. (2004). The measurement of effort–reward imbalance at work: European comparisons. *Social Science and Medicine* 58(8): 1483–1499. [https://doi.org/10.1016/S0277-9536\(03\)00351-4](https://doi.org/10.1016/S0277-9536(03)00351-4)
- Solinge, H. v. & Henkens, K. (2017). Older workers’ emotional reactions to rising retirement age: The case of the Netherlands. *Work, Aging and Retirement* 3(3): 273–283. <http://dx.doi.org/10.1093/workar/wax010>
- STAR (2024). *Tilbagetrækningsydelse: Kommunale nytilkendelser af førtidspension fordelt på hoveddiagnose*. [Retirement benefits: Municipal new grants of disability pension divided by main diagnosis]. <https://www.jobindsats.dk/databank/tydelser/tilbagetraekningsydelser/> (Accessed 1 March 2024).
- Topa, G., Depolo, M. & Alcover, C. (2018). Early retirement: A meta-analysis of its antecedent and subsequent correlates. *Frontiers in Psychology* 8: 2157. <https://doi.org/10.3389/fpsyg.2017.02157>

- Tufte, P., Clausen, T. & Borg, V. (2008). Oplevelser af psykisk nedslidning blandt seniormedarbejdere i den danske ældrepleje. [Experiences of psychological burnout among senior employees in Danish institutional old-age care.] *Tidsskrift for arbejdsliv* 10(2):78–92. <https://doi.org/10.7146/tfa.v10i2.108677>
- Vanajan, A., Bultmann, U. & Henkens, K. (2022). How do newly diagnosed chronic health conditions affect older workers' vitality and worries about functional ability? *Journal of Applied Gerontology* 41(2): 2426–2434. <http://dx.doi.org/10.1177/07334648221118355>
- Wright, M. R. & Brown, S. L. (2017). Psychological well-being among older adults: The role of partnership status. *Journal of Marriage and Family* 79(3): 833–849. <https://doi.org/10.1111/jomf.12375>

Notes

¹While the focus of this scoping review is on workers approaching retirement, we use this term and the term 'older workers' interchangeably for the sake of brevity.



Appendix 1: Search terms for Academic Search Premier

#1 (DE “RETIREMENT planning” OR DE “Retirement decisions OR DE “EMPLOYMENT of older people” OR DE “RETIREMENT age”) OR (approach* N1 retire* or retire* N1 decision* or retire* N1 plan* or “planning to retire” or “near retirement” or “decide to stop working” or “deciding to retire” or “decide to leave the workforce” or “future retiree” or “future retirees” or “prospective retiree” or “prospective retirees” or “potential retiree” or “potential retirees” or “transitioning from work to retirement” or “transition from work to retirement” or transition N1 retire* or “thinking about retirement” or “thinking of retiring” or “retirement uncertainty” or “retirement insecurity” or “retirement expectations” or “expected retirement” or “retirement intention” or “retirement intentions” or “intended retirement” or “intended timing of retirement” or “consider to retire” or “consider retirement” or “considering retirement” or “preferred retirement” or “preferred age of retirement” OR “retirement thoughts” or “retirement attitude*” or “retirement timing” or worker* N1 stuck* or job* N1 lock* or near* N1 retire* or retire* N1 insecur* or “forced to stay in the lab?r market” or “prolonging lab?r force participation” or “extended work life” or “extended working lives” or “prolonged work” or “prolonged working” or “retirement timing”), Expanders – Apply equivalent subjects: (12,466)

#2 (DE “RETIREMENT—Psychological aspects” OR DE “DEPRESSED persons” OR DE “ANXIETY disorders” OR DE “ANXIETY” OR DE “SUBJECTIVE well-being (Psychology)” OR DE “LIFE satisfaction” OR DE “EMOTIONS”) OR TI (psychological effects or mental health or psychological wellbeing or psychological impact) OR AB (psychological effects or mental health or psychological wellbeing or psychological impact) OR KW (psychological effects or mental health or psychological well-being or psychological impact) OR AB (anxiety or depression or depressive disorder or depressive symptoms) OR TI (anxiety or depression or depressive disorder or depressive symptoms) OR KW (anxiety or depression or depressive disorder or depressive symptoms) OR TI (life satisfaction or satisfaction with life or subjective wellbeing or well-being or quality of life) OR AB (life satisfaction or satisfaction with life or subjective wellbeing or wellbeing or quality of life) OR KW (life satisfaction or satisfaction with life or subjective wellbeing or wellbeing or quality of life), Expanders – Apply equivalent subjects : (179,967)

#3 (#1 AND #2): (380), – Limiters: Peer Reviewed, – Published Date: 20000101-20230629

Appendix 2: Project homepages

Uncertain Futures: Managing Late Career Transitions and Extended Working Life. <https://gtr.ukri.org/projects?ref=ES%2FL002949%2F1#/tabOverview> (2023-10-14)

De erfarme. (<https://erfarne.ku.dk/>) (2023-10-14)

Understanding employment participation of older workers – Creating a knowledge base for future labour market challenges. <https://jp-demographic.eu/projects/understanding-employment-participation-of-older-workers/> (2023-10-14)

EXTEND – Extending working lives of an ageing workforce (Germany, Denmark, United Kingdom, The Netherlands, Finland). <https://jp-demographic.eu/projects/extend/> (2023-10-14)

AgeWellAccounts – Age-Specific Wellbeing- and Transfer Accounts: Evaluating Intergenerational Support. <https://agewell.eu/> (2023-10-14)

CREW – Care, Retirement and Wellbeing of Older People Across Different Welfare Regimes <https://crewmoneyyearsbetterlives.wordpress.com/> (2023-10-14).