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Understanding the impact of economic inactivity interventions for people with poor health and disability and the nature of interventions for older workers

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Understanding the impact of economic inactivity interventions for people with poor health and disability and the nature of interventions for older workers: a rapid evidence review

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This report should be cited as:
Bangpan M, Mendizabal-Espinosa R, Li Z, Lin D, Kneale D, Vigurs C (2024)
Understanding the impact of economic inactivity interventions for people with poor health and disability and the nature of interventions for older workers: a rapid evidence review
London: EPPI Centre, UCL Social Research Institute, UCL Institute of Education,
University College London.

Design and editorial by: Lionel Openshaw

Funding & funder involvement
The EPPI Centre (https://eppi.ioe.ac.uk/) undertook this review as a partner of the International Public Policy Observatory (IPPO) (https://theippo.co.uk/).

Acknowledgement and Conflicts of Interest
We would like to thank Professor Joanne Chataway, Urte Macikene, Ka Ka Tsang and Amy Ramsay for the valuable feedback on the draft report and the IPPO wider team for their support. There were no conflicts of interest in the writing of this report.

Contributions
The opinions expressed in this publication are not necessarily those of the EPPI Centre or the funders. Responsibility for the views expressed remains solely with the authors.

ISBN: 978-1-911605-66-9

Contents

Executive Summary

Economic inactivity broadly refers to circumstances where individuals of working age are not employed and who: (a) have not actively sought employment in a specific time period, (b) are not available to start employment, or (c) do not want a job[1]. It has far-reaching adverse consequences on individuals, families, and the broader economy. Economic inactivity has been shown to be both a cause and consequence of poor health.

In June 2024, approximately 9.4 million people in the UK were economically inactive, constituting more than a fifth of the working-age population. This figure reflects a growing concern around the impact of the recent economic climate and the COVID-19 pandemic. Whilst the reasons for economic inactivity are multifaceted, ranging from health issues, caring responsibilities, and retirement; the demographic composition of the economically inactive population has shifted since the pandemic. Individuals with long-term illness have replaced students as the majority of the economically inactive population, and an increasing number of older workers are choosing to retire early or take longer breaks from their careers.

Despite extensive research on the factors surrounding economic inactivity, and interventions aiming to support individuals who have been economically inactive to return to work and retain employment, there remain significant policy-relevant gaps in our knowledge. These gaps include (a) understanding the effect of interventions aimed at those with poor health and disabilities; and (b) understanding the nature of interventions that aim to address economic inactivity among older workers.

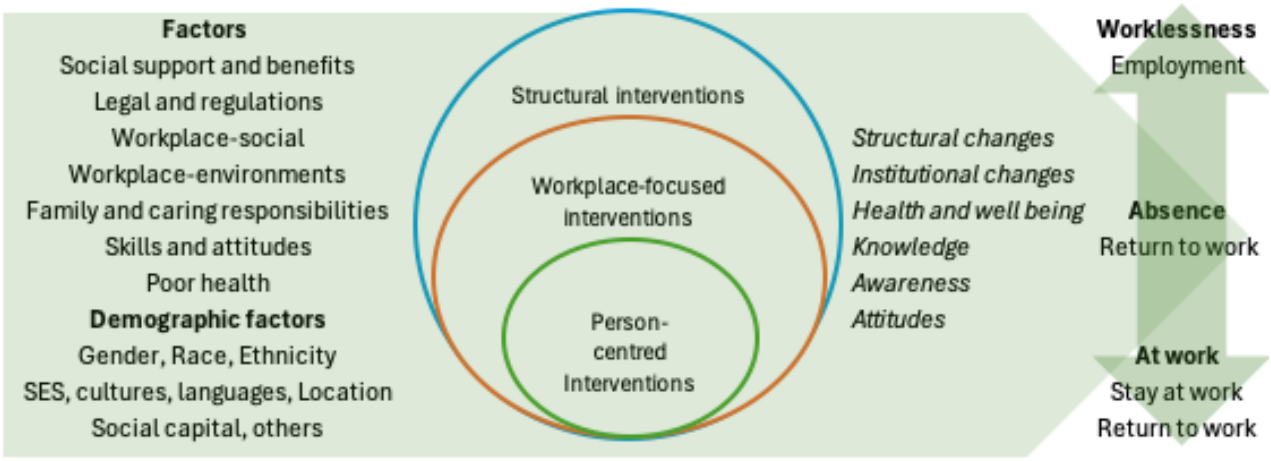
Aims and the development of policy-relevant review questions

The main aim of this Rapid Evidence Review (RER) is to describe the nature, extent of the research on, and the effect of interventions for economically inactive individuals. This RER follows a systematic approach but delivered at pace to respond to policy needs.

At the first stage of the RER, we conducted an initial scoping exercise to identify the breadth of the research literature on interventions with employment outcomes for people with ill health, disability and for older workers. We also developed the conceptual framework to categorise intervention types aiming to address labour market participation outcomes (Figure A).

[1] https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/august2024

Figure A: Conceptual framework of the interventions considered in this review



The findings from the scoping exercise, interpreted alongside policy stakeholders, suggested potential groups of studies upon which to focus on the RER. The result of this scoping exercise identified a large volume of systematic reviews on people with physical and mental ill health and disabilities, and a sparsity of systematic review evidence for older workers. We refined our review questions for each population group as follows:

RQ1: What is **the effectiveness of interventions** aiming to address economic inactivity or improve economic outcomes in individuals with poor health and disabilities?
RQ2: What is **the nature of research evidence and key characteristics of interventions** aiming to provide support and assist the transition from economic inactivity to employment and/or staying in employment for older workers?

To address the research questions, we conducted two evidence synthesis components:

PART A) **an overview of systematic reviews** investigating the effectiveness of interventions designed for people with poor health and disabilities (RQ1)
PART B) **a descriptive map of** interventions designed for older workers to provide an overview of research evidence for informing future research. (RQ2)

Methods

We report the RER approach in two parts reflecting the different nature of the two review questions.

PART A: We conducted a two-stage overview of systematic reviews. The first stage aimed to map the key characteristics of systematic reviews investigating the effectiveness of interventions designed for people with poor health and disabilities. The second stage narratively synthesised outcome data from meta-analyses where appropriate to give an overall picture of effectiveness, and where a meta-analysis was not possible, findings from narrative systematic reviews were presented.

We included systematic reviews if they were published in or after 2010 and published in English. Included systematic reviews all aimed to assess the effectiveness of interventions designed for individuals with poor health and disabilities on labour market outcomes. We excluded systematic reviews that included only qualitative research. We searched eight bibliographical databases. We assessed the quality of systematic reviews using the AMSTAR-2 tool and reported a narrative account of the effectiveness of the interventions for individuals with poor health and disabilities based on the findings from meta-analyses.

PART B: We conducted a systematic map of primary research to identify and describe the key characters of interventions designed for older workers, and how they assessed effectiveness. This 'map' of research describes the scope of research on the interventions to address economic inactivity in older workers, identifies where research has been concentrated, and suggests gaps where future research efforts may be directed. We conducted searches for quantitative intervention studies using key terms for older workers specifically. We included quantitative primary research that investigated the effectiveness of interventions designed for older workers. Included studies must have been published from 2010 onwards, be available in English, and specific to older workers. We narratively reported the key characteristics of studies and interventions designed for older workers to inform future research.

Key findings

PART A: What is the effectiveness of interventions aiming to address economic inactivity or improve economic outcomes in individuals with poor health and disabilities?

- Effectiveness of interventions aiming to address economic inactivity for individuals with mental health conditions (k^2=10)

  Person-centred interventions:
  - Supported employment and Individual Placement Support (IPS) programmes were effective in helping young people with both common mental health conditions and those with severe mental health conditions gain competitive, paid employment and increase job duration. The effectiveness of IPS could be generalised across countries.
  - Computer-Assisted Cognitive Remediation training showed positive impacts on employment, work days, and earnings.
  - Psychosocial support through face-to-face or E-Health interventions, regardless of receiving guidance from a care provider, could reduce the number of sickness days.

[2] No. systematic reviews/or studies

- Improved care management involving practitioners providing enhanced care (psychological support or medication treatment) does not appear to have an impact on the number of sickness absence days.

Multilevel, multi-component Return to Work (RTW) interventions were found to be effective on time to RTW, had no impact on RTW rate, and showed mixed findings on absenteeism.

- Effectiveness of interventions aiming to support individuals with poor physical and/or mental health conditions (k= 8)

Person-centred interventions:

- Cognitive Behavioural Therapy (CBT) based interventions showed positive trends in supporting people on sick leave and improving return-to-work (RTW) outcomes (such as time to RTW).
- Early workplace interventions designed to be delivered to workers with less than 15 days of sickness absence show no difference in the impact on time until RTW.
- Multidisciplinary rehabilitation programmes delivered in different settings (e.g. inpatient or outpatient clinics, days visits or overnight stay) had no impact on RTW.

Workplace-focused interventions:

- Interventions focusing on workplace and equipment changes, work design[3]and involvement of stakeholders from the work environment appeared to be effective for reducing time until first return to work and sickness absence days in individuals. Effectiveness appears to be more evident when delivered to individuals with musculoskeletal disorders.
- Interventions aiming at accommodations in the workplace environment that involved stakeholders or RTW coordinators appeared to have no impact on RTW-related outcomes such as time to RTW, sickness absence, employment rate.

Multilevel, multicomponent RTW interventions:

- Interventions aiming to improve skills, knowledge and behaviours combined with changing individuals or workplace provision such as disability awareness, accessibility for community participation often through a cognitive coaching model appeared to have no significant impact on employment outcomes such as number of jobs, length of employment, wages.

[3] defined as the "*content of work tasks, activities, relationships and responsibilities, and how those tasks, activities and responsibilities are organised*" (Parker, 2014)

- Effectiveness of interventions aiming to support individuals with poor physical health (k =1)

  Multidisciplinary workplace interventions exploring the impact of work assessment, modification, ergonomic training, supervised sessions, and/or CBT appeared to have no impact on sick leave and days of sick leave.

- Effectiveness of interventions aiming to address economic inactivity in individuals with Learning disabilities (k=1)

  Person-centred interventions that applied cognitive technology such as auditory prompting devices, video-assisted training. Devices such as palmtops, computers, smartphones and watches, showed potential for supporting employment-related outcomes, but evidence quality was low.

PART B: What is the nature of research evidence investigating the effectiveness of interventions aiming to provide support and assist the transition from economic inactivity to employment and/or staying in employment for older workers?

Key findings on the characteristics of Interventions for older workers (k=21 primary research)

- **Structural and system-wide level interventions** for older workers focused on raising retirement age eligibility for pensions or by providing financial incentives to encourage older people to delay their retirement. Structural and system-wide level interventions include benefit and eligibility rules for people seeking work (including older people) and for whom health conditions impact their ability to find work.
- **Work-focused interventions** for older workers included those that aimed to prevent ill health through health and safety measures and work adaptations for older people with or to prevent chronic conditions that can lead to earlier exits from work through chronic illness into retirement.
- **Person-centred interventions** for older workers aimed to increase or enhance skills to (i) find a job (e.g. in the form of CV writing, job searching skills or coaching for attitudinal and behavioural changes); or (ii) acquiring of enhancing skills for a job in the form of education and training for specific skills gaps.
- **Health promotion workplace interventions** for older workers focused on the workplace as a site for health promotion such as workplace exercise, diet advice, relaxation, and other activities and information campaigns to promote physical health and wellbeing.

Conclusions

The RER shows growing evidence on the effectiveness of interventions addressing barriers to employment and retention for older workers and people with ill health or disabilities. The RER supports the previous and recent research demonstrating the effectiveness of IPS to improve employment outcomes for individuals, particularly for young people with mental health conditions and those on sick-leave [1,2]. Multicomponent interventions including psychological support combined with work adaptations can reduce days off sick for people with mental health conditions. Interventions that incorporate CBT approaches in their implementation appear be effective in supporting workers with poor health to return to employment. The RER also highlights key research gaps. First, review-level evidence on the effectiveness of interventions designed for individuals with physical health and learning disabilities is sparse, limiting our understanding into what interventions might work to support these population groups. Second, evidence on the effectiveness of workplace-focused interventions and multicomponent programmes aiming to address barriers at individual level, or the adaption working environments, is not well-understood. Trials frequently lack programme theory; there is little evidence on the implementation of interventions; and a paucity of well-designed multilevel trials which are complex and expensive to run. Equally important, there are gaps in understanding of how different ecological dimensions and socioeconomic determinants interact and shape individuals' decisions on labour market participation to inform programme design and policy decisions.

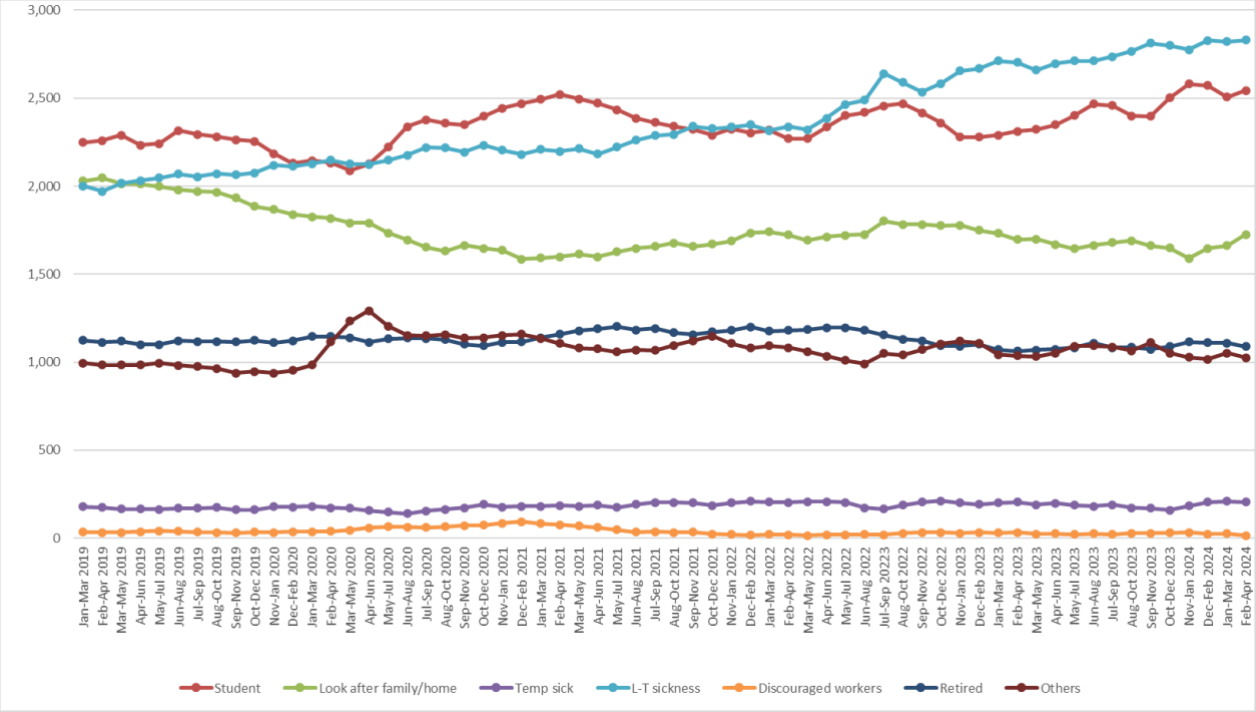
Finally, the characteristics of populations who are economically inactive are heterogenous. Population characteristics such as age, ill health or disability, may be analytically useful – yet in reality they are not mutually exclusive but intersectional and dynamic. Future research may be also needed to explore the nature and effectiveness of interventions designed to address barriers to employment or retainment in other populations of complex and multiple disadvantages, such as those who are socially excluded (e.g. ex-prisoners, people who have experienced homelessness, or individuals with caring responsibilities). Finally, policymakers should be mindful that policies and programmes intended to benefit one population group can have unintended consequences for others. Employers need to consider equality of opportunities when providing services, adaptations and activities for some groups but not others.

Chapter One: Introduction

Economic inactivity broadly refers to circumstances where individuals are not employed and who: (a) have not actively sought employment in a specific time period, (b) are not available to start employment, or (c) do not want a job [4]. It has far-reaching adverse consequences on individuals, families, and the broader economy. Economic inactivity has been shown to be both a cause and consequence of poor health.

In June 2024, approximately 9.4 million people in the UK were economically inactive, constituting more than a fifth of the working-age population. Of these, 2.8 million were economically inactive due to long-term sickness (see Figure 1). This figure reflects a growing concern about the impact of recent economic climates and the COVID-19 pandemic.

Figure 1.1: Economic inactivity in the UK by reason (seasonally adjusted) between 2019-2024 (in thousands)



Data source: Office for National Statistics

While the reasons for economic inactivity are heterogeneous across demographics, long-term sickness emerges as a primary driver, particularly among the working-age population (aged 16-64) in the UK [3-5]. This is exacerbated by the long- term effects of the COVID-19

4 https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/august2024

pandemic, as some individuals were unable to actively seek employment. Strained healthcare services also contributed to a rise in health-related economic inactivity. Poor health can be a cause and a consequence of unemployment. Unemployment can harm health and make finding or sustaining employment more difficult at any age. Local authority areas with higher-than average economic inactivity tend to have lower life expectancy[5].

Economic inactivity in the UK and globally has long been a concern due to its social, political, and economic implications. It tests individual and family resilience, the tax system, and social protection and welfare systems, as it is closely linked to the need for financial, mental, and health support, resulting in a reduced labour supply and increased poverty [6-9]. At the individual level, the scarring effect of economic inactivity, highlighted by research evidence [10,11] demonstrates that previous and current economic recessions can have long-term negative effects on later employment outcomes.

Indeed, immediate, and effective actions need to be taken to address and improve the issue of economic inactivity. In the UK, the growing inactive population is argued to lead to inflationary pressures and a shortage in labour supply, with the cost of labour shortages estimated to reach £39 billion annually from 2024 to 2027 [12]. Addressing these challenges through effective interventions will not only alleviate current economic pressures but also support the UK in meeting the United Nations 'Sustainable Development Goal 8' of achieving inclusive and decent work and economic growth by 2030. Current intervention studies on economic inactivity often consider three pathways:

1) preventing individuals from becoming economically inactive, whether through employment or by keeping them engaged in activities such as education;
2) reducing the existing inactive population through employment or return-to-work interventions; and
3) implementing welfare-related policies that ensure the living standards of the inactive population, such as disability-related welfare payments.

However, inconsistencies in conceptualising and measuring 'economic inactivity' complicate efforts to assess the effectiveness of interventions targeting economic inactivity. Studies addressing economic inactivity may not uniformly define the term but simply share the common goal of reducing inactivity rates and increasing labour force participation.

Definitions of 'economic inactivity' can vary significantly across studies [3]. Some studies may also include the inactive population within analyses alongside the unemployed [13]. The

[5] Health Foundation Analysis of Office for National Statistics, Annual Population Survey, England, Oct 2022–Sep 2023, Ministry of Housing, Communities & Local Government, English Indices of Deprivation, England, 2019, Office for National Statistics, Health state life expectancies, UK, 2018–20

variability stems from how the concept of economic activity is defined, differences in population focus (age ranges, reasons of economic inactivity such as chronic or acute health conditions, disabilities, mental health, retirement before the statutory retirement age, people engaged in family care), and some studies considering individuals not actively seeking work, or not participating in education or training programmes.

The diverse nature and the complexity of interventions necessitate a nuanced understanding of how different interventions affect various population groups. There may be different effective interventions designed for certain groups that are less successful or even detrimental for others. Further research is needed to identify which interventions work best for specific populations, considering factors such as age and health conditions. This investigation is crucial for tailoring interventions to maximise their impact and avoid unintended consequences. Despite numerous research projects exploring the impact of interventions to address economic inactivity, there are research gaps in comprehensively evaluating the nature of international research evidence and systematically synthesising the effectiveness of a broad range of interventions for individuals with poor health and disabilities and older workers. This review aims to address such research gaps.

1.1 Initial conceptual framework

For this review, **economic inactivity** broadly refers to circumstances where individuals are not employed and who: (a) have not actively sought employment in a specific time period, (b) are not available to start employment, or (c) do not want a job [6]. **Unemployment** refers to individuals who are not employed but have been actively seeking jobs for a specific time and are also available to work in the next two weeks [4]. **Disability** refers to individuals who have difficulties or reduced ability either physically or in learning or understanding that has a substantial and long-term effect on their ability to do normal daily activities [7].

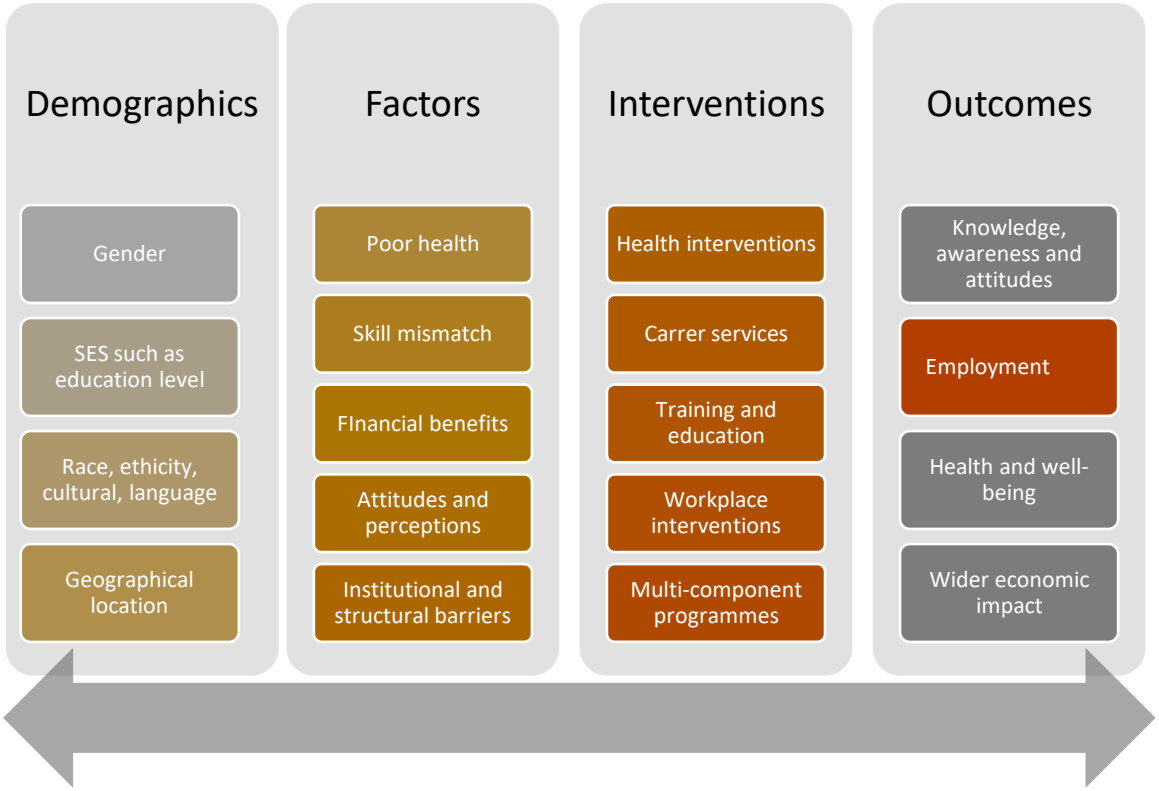
We developed a conceptual understanding of how interventions might work to address economic inactivity in a) older workers [8] and b) individuals with poor health (see Figure 1.2) and the factors that can contribute to economic inactivity for older workers and those with poor health or disabilities.

[6] https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/methodologies/aguidetolabourmarketstatistics

[7] https://www.gov.uk/definition-of-disability-under-equality-act-2010

[8] generally defined as those aged 50+. https://assets.publishing.service.gov.uk/media/5a747dd640f0b646cbc403e3/older-workers-and-the-workplace.pdf

Figure 1.2: Initial conceptual framework of the review



Demographic factors, for example

- Gender: Women may face gender discrimination in the workplace, unequal pay, or may take time off to care for children or elderly relatives.
- Socioeconomic status: For example, education level: Individuals with lower levels of education may have limited job opportunities or may lack the necessary skills for available jobs.
- 'Race' or ethnicity: minoritised groups may face discrimination in the labour market and have limited job opportunities.
- Geographic location: Individuals living in areas with high unemployment or limited job opportunities may be more likely to be economically inactive.

Health factors may limit a person's ability to work, either temporarily or permanently. It may make it difficult for them to find or maintain employment. Examples of health issues or disabilities that can prevent people from working include:

- Physical disabilities such as mobility impairments or chronic conditions such as arthritis or hearing or vision loss
- Mental health conditions such as depression, anxiety or other psychiatric conditions
- Neurological disorders such as multiple sclerosis or Parkinson's disease
- Other long and short-term health conditions such as cardiovascular, respiratory or other types of disease, acquired brain injuries, long COVID, etc.

Skill mismatch between job seekers and available jobs. This can occur for several reasons, including a rapidly changing labour market, an ageing population, and changes in technology.

Financial benefits and other forms of government support which (dis)incentivise seeking employment, for example unemployment benefits

Attitudes and perceptions towards work, including a preference for leisure or retirement. For example, some individuals may choose to retire early or take extended periods of leisure, while others may prioritise leisure activities over paid work. In some cases, individuals may face financial constraints that prevent them from retiring, but they may still prioritise leisure activities over paid work. See the trends above, most noted in older populations in the UK, who do not want to return to work. Also, factors that might influence economic inactivity after COVID-19 among people aged 50-60 [14].

Institutional and structural barriers, e.g. discrimination or difficulty accessing training or education programmes linked to demographic factors above

All these factors can interact with each other and with others such as health, job opportunities, and personal responsibilities to influence labour force participation. The factors can be context-specific. Depending on the programme theory of the interventions, several determinants of economic inactivity can be targeted to improve different social, health and economic outcomes. In this RER, we aim to gain a deeper understanding of how interventions are designed and implemented to address key factors that might influence labour market and employment outcomes to address the economic inactivity of individuals with poor health and disabilities. We also aim to understand the nature of research evidence assessing the impact of interventions designed for older workers.

Chapter Two: Methods

This chapter presents an overall approach to conducting the Rapid Evidence Review (RER). In recent years, findings from RERs have been increasingly used to inform policy and practices across disciplines [15,16]. This RER follows key methodological steps of traditional systematic reviews to synthesise knowledge and findings from research evidence within a shortened timeline. The RER achieves rapidity by focusing on where there is systematic review evidence giving an overall picture of effectiveness, where there is consistency of measured outcomes, but in different contexts and modes of delivery. Systematic reviews can overcome some shortcomings of individual, underpowered studies, and can give a more reliable picture of overall effectiveness than single studies.

2.1 Review aims and research question

The broad aim of this RER was to describe the nature of research evidence on economic inactivity interventions delivered for individuals with poor health and disabilities and older people. The review approach adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidance [17] provided in Appendix A. The protocol was registered at PROPSERO CRD42024523991. The review has been approved by the IOE ethics research committee.

2.2 Type of review

The RER consisted of **a two-stage systematic review process**. The first stage consisted of a scoping exercise carried out between November 2023 and February 2024. The scoping exercise aimed to identify existing research evidence undertaken in the field of economic inactivity as part of the protocol development. The scoping exercise informed the decision on the final scope of the review by indicating the extent and type of research.

2.3 STAGE ONE: A scoping exercise

2.3.1 Identification of relevant research

We searched on Scopus using the key main concepts: populations, economic inactivity focus, and types of evidence. We aimed to address the following broad review question:

What is the nature of research evidence investigating the effectiveness of interventions aiming to enhance labour market participation among a) older workers and b) individuals with disabilities or poor health conditions?

Our inclusion criteria were:
Population: Older workers (over-50s or as reported) or those with ill health, with (pre)existing health conditions/disabilities. We excluded research that evaluated interventions primarily targeting severe, complex and/or multiple disadvantage such as

those with low socioeconomic backgrounds, (ex)prisoners, migrants, or those with previous histories of incarceration or substance abuse.
Intervention: We included any type of interventions that aimed to address economic inactivity among older workers and those with poor health/disabilities, including but not limited to universal support, outreach, workplace, return to work, health interventions, financial incentives, laws and regulations.
Outcome: We included systematic reviews and primary research that reported at least one labour market outcome (e.g. return to work, absence, income, employment rate).
Study design: We included research conducted to assess the effectiveness of interventions designed to address economic inactivity in older workers and those with poor health and disabilities. We considered systematic reviews, evidence synthesis, review of quantitative studies including randomised controlled studies, non-randomised studies, experimental studies, cohort studies, longitudinal studies, and cross-sectional studies, with or without comparison groups.
Date and language: We considered only studies published on or after 2010 (government policies in the UK) and those that are published in English.
Geographical location: No restrictions.

We coded key information from the studies included in the scoping exercise on population, types of intervention, outcome, and study design.

2.3.2 Initial findings from the scoping exercise

We identified 960 records and conducted the initial screening based on the title and abstract of 155 systematic reviews. From this initial scanning, we found:

- Out of 155 systematic reviews from the search, 56 were relevant to economic inactivity.
- 21 systematic reviews focused on the populations with mental health, while another 21 targeted long-term sickness and/or 18 addressed those with disabilities. Only five reviews focused on older workers (Figure 2.2).
- The most common intervention we identified in the review was a 'return to work' type of intervention (Figure 2.3).
- Upon a quick scan, it was evident that the components and approaches to programme design and delivery varied. However, the overall programme objective of these programmes appeared to target economic inactivity among individuals with health conditions (see Figure 2.4).
- In preliminary coding, nearly all reviews reported outcomes which were related to: employment (e.g. absence rate, return to work rate, working hours, job tenure, job change, productivity, and workability); health (e.g. quality of life, psychiatric symptoms, wellbeing, stress, depression); as well as knowledge, attitudes and awareness (e.g. education, skills). Two reported on resilience, while seven detailed intervention cost-effectiveness.

Figure 2.2: Population focus on systematic review (k=56, codes not mutually exclusive)

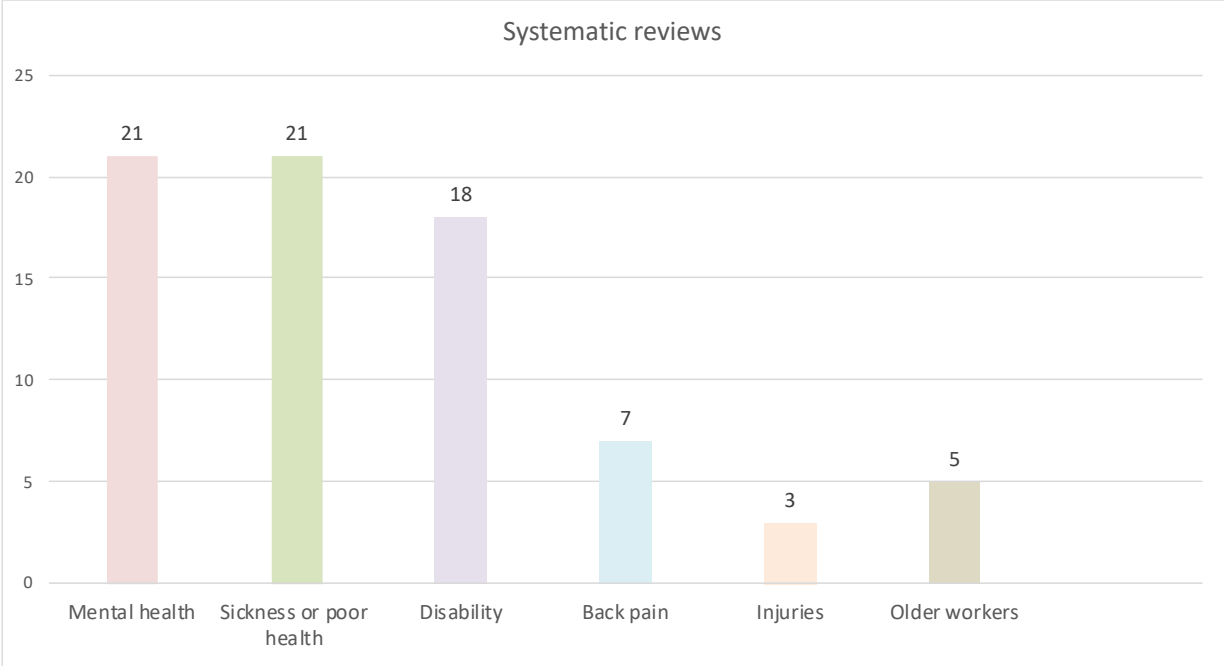


Figure 2.3: Intervention type (k=56, codes not mutually exclusive)

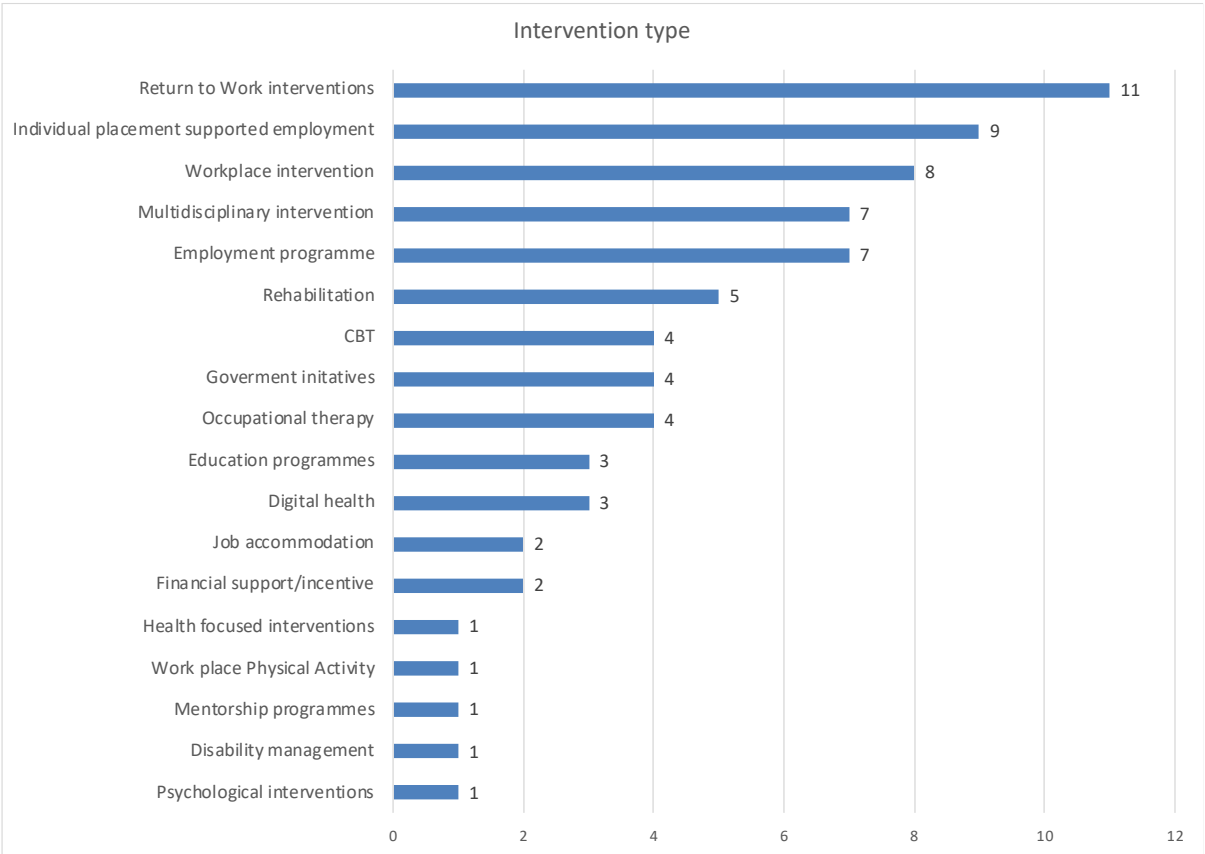
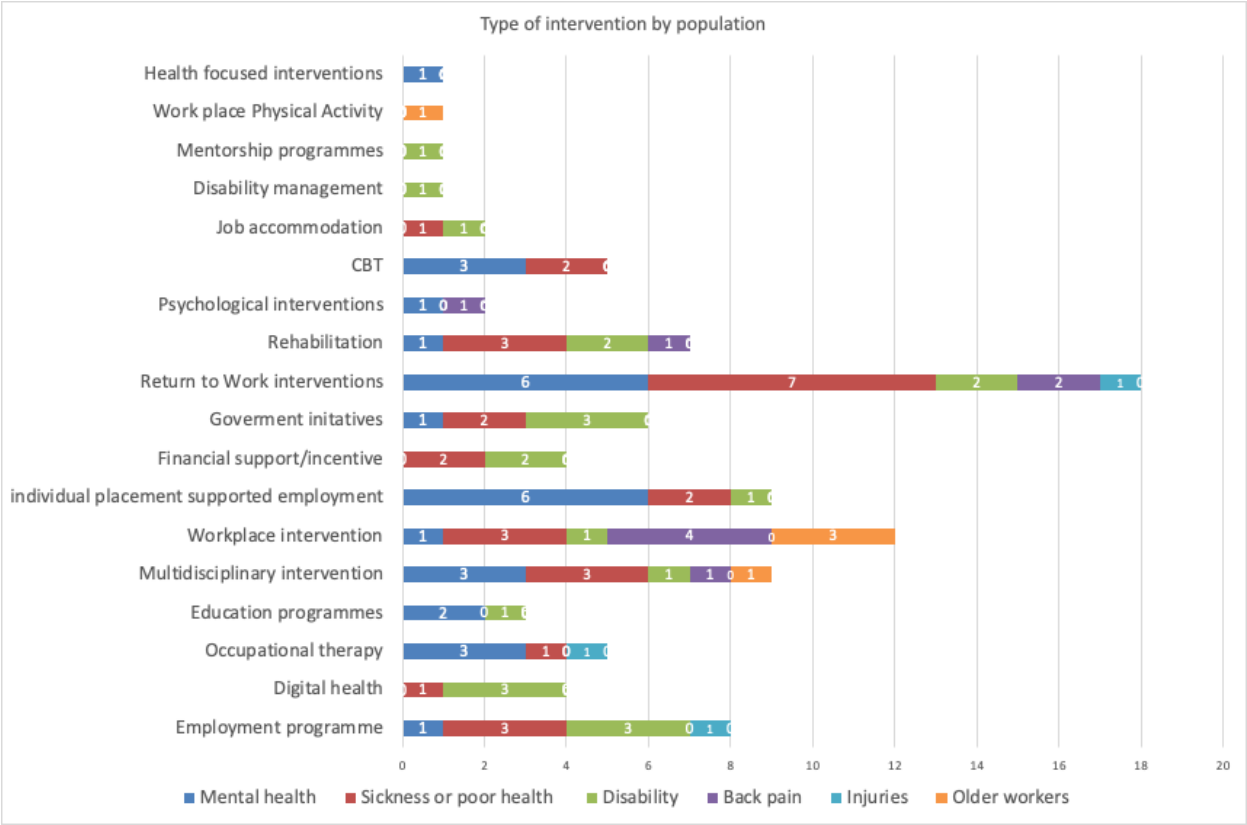


Figure 2.4: Type of intervention by population (k=56, codes not mutually exclusive)



2.4 STAGE TWO: Refining the review questions and setting the scope

After reviewing the broad nature of the evidence identified in the scoping exercise stage, and identifying different patterns in the density of research for the population groups, such as the number of systematic reviews for people with poor health and disability, and the limited number of systematic reviews of interventions for older people, we refined the questions and scope of the RER after stakeholder consultation as follows:

Research questions

RQ1: What is **the effectiveness of interventions** aiming to address economic inactivity or improve economic outcomes in individuals with poor health and disabilities?
RQ2: What is **the nature of research evidence and key characteristics of interventions** aiming to provide support and assist the transition from economic inactivity to employment and/or staying in employment for older workers?

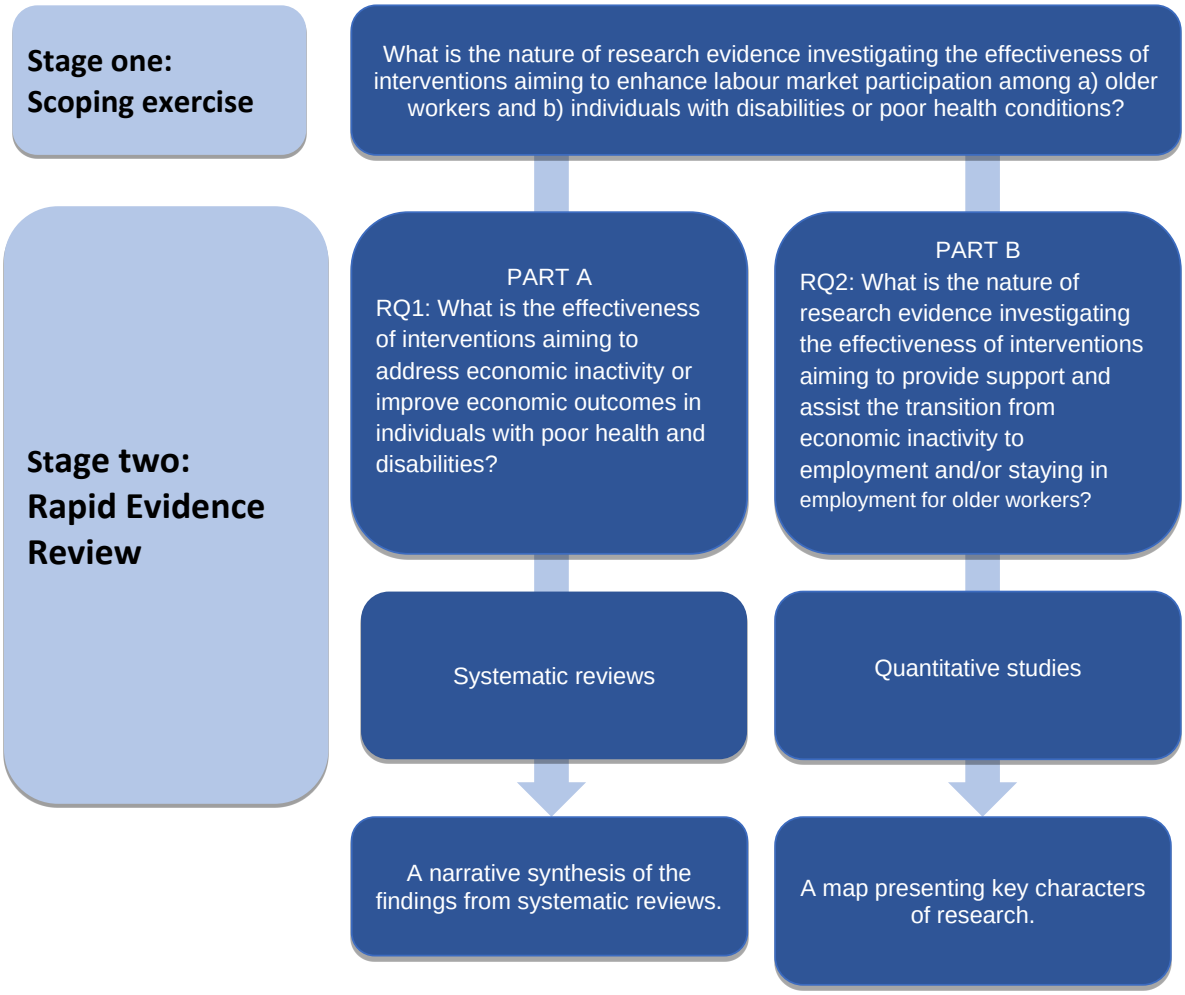


Figure 2.5 : Overall approach and key stages of the scoping exercise

PART A: an overview of systematic reviews investigating the effectiveness of interventions designed for people with poor health and disabilities

To be included in the PART A, systematic reviews must meet the following eligibility criteria:

Population

We focused on individuals with ill health, with (pre)existing health conditions/disabilities. We excluded systematic reviews that focused on interventions primarily targeting adults without health conditions or disabilities. We excluded systematic reviews that focus on disadvantaged or socially excluded populations, such as those with low socioeconomic backgrounds, people in prison, migrants, or those with previous histories of incarceration or substance abuse.

Interventions

We included all types of interventions that aim to address barriers to employment and improve return-to-work outcomes of individuals with poor health and disabilities.

Study design

To investigate the effectiveness of the interventions designed for individuals with poor health and disabilities, we included systematic reviews of quantitative studies. We excluded systematic reviews that included only qualitative studies. Systematic reviews must have conducted searches in two or more databases, clearly reported eligibility criteria, and assessed the quality of studies included in the systematic review.

Outcomes

We included only studies that measured and reported labour market related outcomes such as employment rate, absence, return-to work, income, productivity, job security, job searches, seeking employment, job applications, and/or retainment. We excluded studies that only measure or report knowledge, attitudes, motivation, health, mental health, and well-being without reporting labour market participation outcomes.

PART B: a systematic map of interventions designed for older workers to provide an overview of research evidence for informing future research.

To be included in the PART B, systematic reviews must meet the following eligibility criteria:

Population

We focused on individuals described as "older", typically over the age of 50. We excluded studies that evaluated interventions primarily targeting young people. We excluded studies that focus on disadvantaged or socially excluded populations, such as those with low socioeconomic backgrounds, people in prison, migrants, or those with previous histories of incarceration or substance abuse.

Interventions

We included interventions that aim to address barriers to employment and improve return-to-work outcomes of older workers.

Study design

We included quantitative primary research conducted to assess the effectiveness of interventions designed to address economic inactivity in older workers.

Outcomes

We included only studies that measured and reported labour market related outcomes such as employment rate, absence, return-to work, income, productivity, job security, job searches, seeking employment, job applications, and/or retainment. We excluded studies that only measure or report knowledge, attitudes, motivation, health, mental health, and well-being without reporting labour market participation outcomes.

In both PART A and PART B, we grouped interventions into four main categories: a) person-centred interventions, b) workplace-focused interventions, c) structural interventions, and d) multilevel/multi-component interventions (see Figure 2.6). Within these groups, we mapped out two employment pathways of individuals: transition to work and remain in work. These interventions may be single or multi-component programmes and may be delivered at the individual, workplace, healthcare settings, community, and/or national levels.

Person-centred interventions

a) Occupational Therapy and Vocational Rehabilitation (OTVR)

In this review, occupational therapy or vocational rehabilitation refers to a programme designed to support people with physical and psychiatric illnesses or disabilities. These programmes aim to a) help individuals achieve independence and functioning to fulfil their life aspirations and b) enable them to access, participate in, and maintain employment [18]. In some cases, OTVR may involve an occupational therapist to evaluate the functioning of the individual and engage with the individual to design a programme to address disability.

Occupational therapy or vocational rehabilitation programmes often include evaluating a person's abilities to match with appropriate jobs. They also provide resources and support to prepare individuals for the job markets and gain employment. OTVR programmes may include, but are not limited to:

- Pre-vocational training or traditional vocational rehabilitation programmes aim to provide training to individuals before they gain employment or the 'Train and Place' model. Programme components often include training classes and workshops for generic social and cognitive skills, stress management, assessments, and counselling [19 20].
- Supported training and education programmes focus on generalised skills for specific situations, problems and activities to improve functioning. It aims to enhance individuals' daily social activities and problem-solving skills [21 22].
- CBT programmes aim to improve cognitive processes with the goal of durability and generalisation [23 24 25 26 27].
- Sheltered workshops/employment refers to a workplace that provides a segregated working environment where people with a mental or physical disability can acquire

job skills and vocational experience. It could include long-term placements for those who are unable to work in community settings [28] [29] [30].

- Social enterprises offer paid employment for people who have difficulty integrating into the labour market [31]. They can provide a flexible environment that supports a sense of belonging, independence and success [32].
- The clubhouse model aims to provide members with satisfying work and opportunities for social support. Clubhouses are run by members and staff working in partnership. The clubhouse approach involves a period of preparation before returning to paid employment [33] [34] [35].
- Supported employment focuses on providing support to identify a job and ongoing support to maintain employment. It may include: [36] [37] [21] [22]
    - Individual placement and support (IPS)programmes aim to provide employment support, from getting a place to ongoing support for anyone who wants to work. The programmes also work closely with employers and individuals to find a suitable job. The services are typically integrated with health services [22] [36].
    - Integrated Supported Employment or Augmented Supported Employment (Boycott 2012) combines supported employment with other prevocational skill training programmes, including social skills training [38].

b) Treatment and medication may include:

- Assertive community treatment, which provides clinical and case management. It may involve multidisciplinary health professional teams such as case managers, a psychiatrist, nurses, social workers, or occupational therapists [39].
- Physical therapy is a form of prolonged treatment designed to address mobility and functionality issues throughout the body. Whether your symptoms arise from pain or injury, sometimes involving various tools designed to restore maximum possible mobility.

c) People-centred return to work (RTW) interventions aim to:

- Support individuals with poor health and disabilities in returning to work after short or long-term sickness absence. These programmes seek to reduce the number of sickness absence days and increase the percentage of individuals returning to work. RTW programmes may include activities such as CBT, counselling, treatment, and education and training, which are delivered directly to individuals.

Workplace focused interventions

d) Workplace-focused interventions

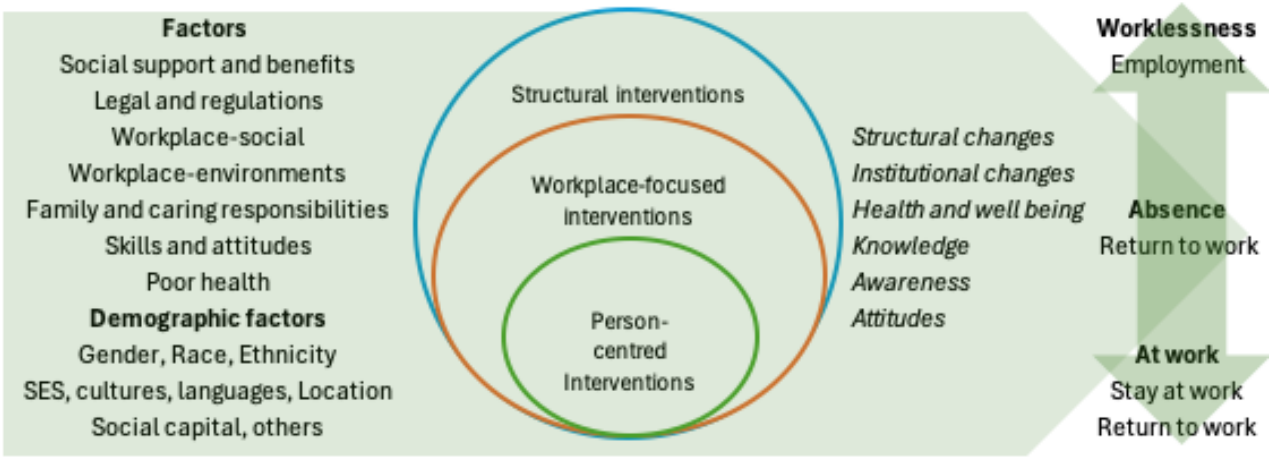
These programmes aim to support individuals in reintegrating into the workplace after sickness absence, like people-centred RTW interventions. However, these interventions specifically focus on workplace adaptations, changes in work environments or conditions, and programmes involving employers to facilitate work

reintegration [40] [41] [42]. These programmes also consider the needs and legal responsibilities of employers. Workplace-focused RTW interventions may include, but are not limited to:

- Workplace adaptation initiatives such as changes in the furniture, lights, noise, and materials needed to perform work.
- Changes in schedules or tasks.
- Changes in working conditions, such as financial and contractual arrangements.
- Use of technology such as computers, software, artificial intelligence, phones and other electronic, online device.
- Stakeholder engagement activities to improve or adapt relationships with employers, supervisors, or coworkers.

Structural interventions may include national level legal frameworks, policies, and eligibility rules about, tax, pension, social security, and benefits.
Multilevel, multi-component interventions focus on various aspects of person-centred, workplace-focused interventions and/or structural interventions. They may have programmes to support individuals accessing, participating in, maintaining, and RTW and working with individuals, workplace components and wider environments.

Figure 2.6: Conceptual framework of the interventions considered in this review.



The eligibility criteria can be found in Appendix B

2.4.1 Searching

We developed the preliminary search strategy for the scoping exercise, which was used to conduct a search to identify relevant research (both PART A and PART B) addressing the review questions. At this stage, we searched eight bibliographical databases, including Scopus, ERIC, Econlit, British Education Index, Business Source Premier, EMBASE, Medline and Social Policy Practice. Key search terms were developed based on the scoping exercise stage. Search strings were a combination of the main key terms and their synonyms, which denote key aspects of research evidence. The search used the Boolean operator 'OR' to link

each key aspect to their synonyms. Then, all key aspects were combined using 'AND' to identify relevant literature. A table of the key search terms used and an example of their use in a specific search can be found in Appendix C.

We conducted a reference checking of studies that are included in the review. Special list databases and grey literature were also searched through the Health Management Information Consortium (HMIC), Google Scholar, and PROSPERSO. The following key websites were searched:

- World Bank http://www.worldbank.org/
- Institute of Development Studies http://www.ids.ac.uk/
- Centre of economic performance https://cep.lse.ac.uk/_NEW/publications/abstract.asp?index=10314
- Learn and work https://learningandwork.org.uk/resources/research-and-reports/missing-workers/
- Scottish Government https://www.gov.scot/publications/economic-inactivity-young-people-aged-16-24-definition-reasons-potential-future-focus/pages/4/
- Institute of Fiscal studies https://ifs.org.uk/sites/default/files/output_url_files/BN345-the-rise-of-economic-inactivity-in-people-50s-60s.pdf

2.4.2 Selection of studies and quality assurance

Search results were imported into EPPI-Reviewer 6 (Thomas et al., 2023). We piloted inclusion criteria by comparing decisions both PART A and PART B in pairs (MB, RM, ZL). Any differences were resolved through discussion. Each reference was screened based on titles and abstracts. Full reports were obtained for the references judged as meeting the inclusion criteria or where there was insufficient information from the title and abstract to assess relevance. We piloted the eligibility criteria again with all review team members (MB, RM, ZL, OM, CV, JA) to ensure that we had a mutual understanding of the key concepts used in the eligibility criteria. Any disagreement was solved through discussion.

2.4.3 Data extraction and management

The review team extracted data from the included systematic reviews (PART A) and primary studies (PART B) using tools developed specifically for this review. The data extraction tools were piloted by reviewers on a set of studies. Any disagreements were resolved through discussion amongst those pairs of reviewers. Information was extracted from all systematic reviews: types of publications, date, types of intervention, outcomes, study design and findings of the systematic reviews. We also extracted the findings of the review authors as reported in the form of numerical and narrative summary statements.

2.4.4 Quality assessment for systematic reviews

The review team members assessed the quality of systematic reviews included in the PART A to address RQ1 using the AMSTAR-2 tool [43]. We resolved any disagreements by discussing and consulting with a third author when required. We classified the overall quality of systematic reviews by weighting them as high, medium, low, critical-low quality. We used the following classification framework:

High-quality systematic reviews needed to answer yes or partial yes in all the following (see Appendix D):

• Protocol: Did the report of the review contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify any significant deviations from the protocol?
• Comprehensive search strategy: Did the review authors use a comprehensive literature search strategy?
• Duplicate data extraction: Did the review authors perform data extraction in duplicate?
• Description of studies: Did the review authors describe the included studies in adequate detail?
• Quality appraisal: Did the review authors quality appraise the included studies?

Medium-quality reviews needed to meet yes or partial yes on more than two of the critical domains:

• Review question and inclusion criteria: there an explicit aim/research question and inclusion criteria?
• Search strategy: Did the review authors use a comprehensive literature search strategy?
• Duplicate screening: Did the review authors perform study selection in duplicate? OR
• Excludes reported: Did the review authors provide a list of excluded studies and justify the exclusions?
• Description of studies Did the review authors describe the included studies in adequate detail?

Low-quality reviews needed to meet yes or partial yes on at least one of the critical domains.

Critical low-quality reviews failed to answer yes or partial yes on one of the critical domains.

We did not assess the quality of primary research studies investigating the impact of interventions for older workers as we only narratively described the nature of evidence for this population group.

PART B: no quality assessment of primary research was carried out.

Synthesis of evidence from systematic reviews

We produced a narrative account of the effectiveness of interventions, detailed information about the characteristics of included studies and outcomes measured. The findings were organised according to population focus. We then explored the direction of effects based on pooled effect sizes when possible. When no pooled effect size was reported, we presented the results of relevant outcomes reported by systematic reviews. This could be by risk ratio (RR) with a 95% confidence interval (CI), or for continuous data, we reported mean differences at baselines and post-interventions measures or standardised mean differences (SMD) and their standard deviation (SD) if no common scales were used. When a study does not report SD, we obtained SD from other data such as t-statistics, p-value or confidence interval if available.

When the systematic reviews reported the pooled effect sizes from more than one study, we considered whether there were any statistically significant differences between groups. We reported the findings by considering: (i) evidence of positive impact when the direction of positive effect was statistically significant; (ii) no evidence of difference when it was not possible to detect any statistically significant differences in the direction of effect between those receiving interventions and those in control or comparison groups for particular outcomes; (iii) evidence of harm: when the direction of effect was negative, statistically or not .

PART A: the interventions characteristics reported in systematic reviews and the findings of the effectiveness of interventions aiming to address economic inactivity for individuals with poor health and disabilities are presented in **Chapter 3 and 4,** respectively.

PART B: We narratively describe key characteristics of research evidence investigating the effectiveness of interventions to address economic inactivity in older workers. The findings of the systematic map are presented in **Chapter 5.**

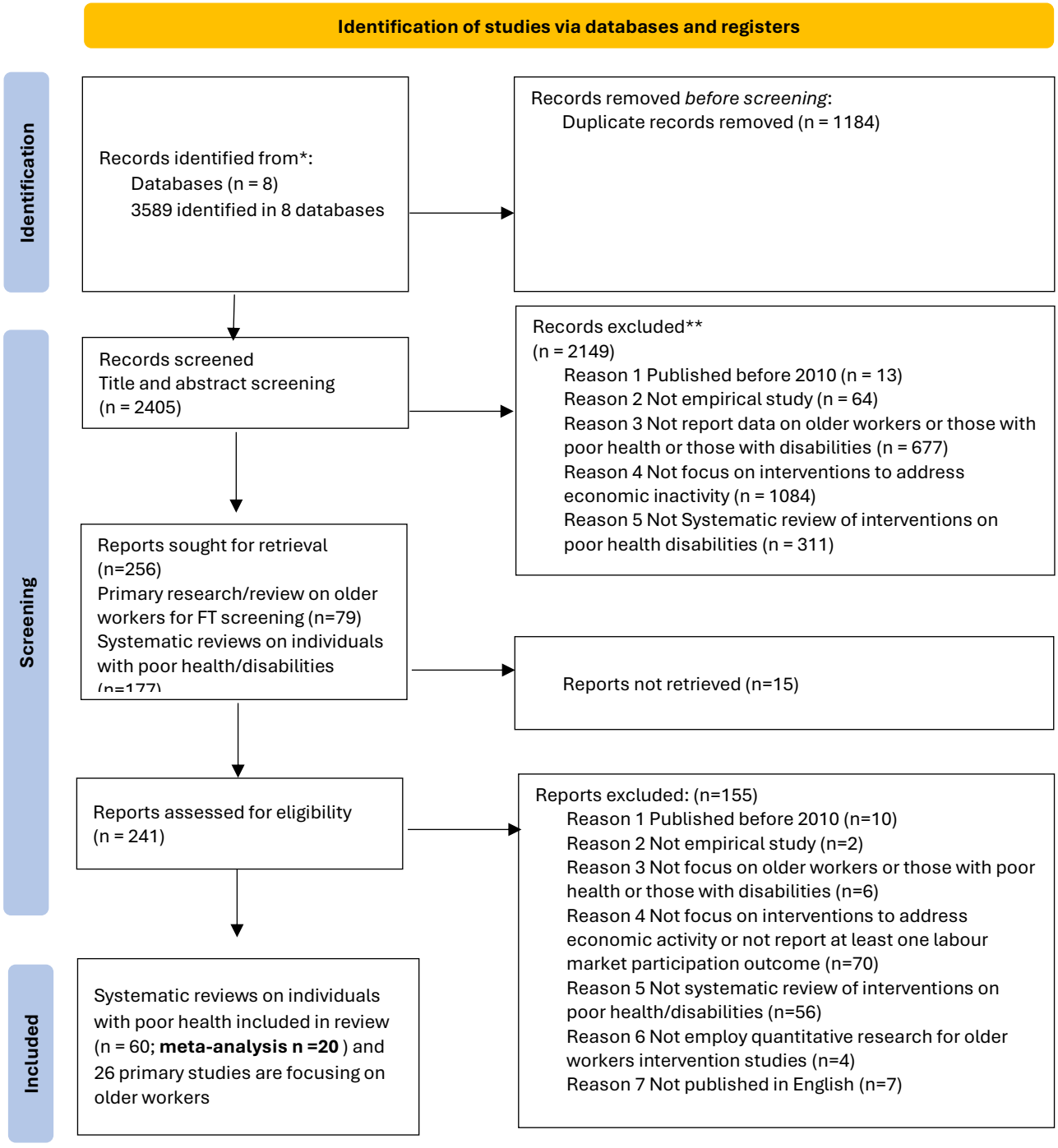
Chapter 3: Intervention characteristics in systematic reviews for individuals with poor health and disabilities

This chapter presents the flow of literature through the systematic map and research included in the RER (Section 3.1). Section 3.2 describes a body of evidence of systematic reviews assessing the effectiveness of interventions for individuals with poor health and disabilities. The key characteristics of interventions in systematic reviews are presented in the appendices (See Appendix F).

3.1 Selection of studies through the RER

A total of 3,589 records were identified from searches across eight databases: ECONLIT, British Education Index, Business Source Premier, EMBASE, Medline, and Social Policy Practice. After removing 1,184 duplicate records, 2,405 records remained for screening. During the screening phase, 2149 records were excluded based on title and abstract due to not meeting inclusion criteria (e.g. published before 2010, not empirical study, those with poor health or those with disabilities, not focused on interventions to address economic inactivity, not systematic review of interventions on poor health disabilities) resulting in 256 full-text articles assessed for eligibility, 15 studies were excluded because the full text could not be obtained. Besides, 155 articles were excluded due to not meeting inclusion criteria (e.g., published before 2010, not empirical study, not focusing on those with poor health or those with disabilities, not focusing on interventions to address economic activity or not reporting at least one labour market participation outcome, not systematic review of interventions on poor health/disabilities, intervention studies, not published in English). Finally, 86 studies were included in the review (Figure 3.1).

Figure 3.1: Flow of studies include in the review



3.2 Key characteristics of systematic reviews of interventions of people with poor health and disabilities

We identified 60 systematic reviews evaluating the effect of interventions aiming to improve labour market participation outcomes for individuals with poor health and disabilities. More than half of the systematic reviews (k=38) included studies that were conducted in European countries, including Norway, Denmark, and the Netherlands. Studies conducted in other countries such as the UK, USA, Canada, Australia, Israel, and Japan were also identified in the included systematic reviews. A sizeable portion of the systematic reviews targeted individuals suffering from various mental health issues (k=27). These mental health conditions included schizophrenia, severe depression, bipolar disorder, and stress-related disorders. Twenty-five systematic reviews considered multiple populations, including people with sickness absence, physical and mental health conditions. Six systematic reviews explored the impact of interventions on individuals with physical health and disabilities, and two on individuals with learning disabilities. Young people, including transition-age youth with disabilities, were the focus of two reviews [36 44]. Twenty-eight reviews evaluated interventions delivered to employed workers. Sixteen systematic reviews included interventions designed for workers in sickness absence. Eight systematic reviews were considered on individuals who were not in work.

The included systematic reviews highlighted a strong emphasis on employment/labour market component interventions (86%, k=51). These included Individual Placement and Support (IPS) programmes, job accommodation, return to work interventions, job search and placement services, and employment support for specific groups such as those with severe mental illness. This type of intervention aimed to facilitate entry or re-entry into the workforce, enhancing vocational skills, and providing support within the workplace. Health component interventions were the second most frequent type of intervention included in this systematic review (55%, k=31). This type of interventions focused on multidisciplinary health support, including physical and psychological therapies, cognitive rehabilitation, and health services delivered at or connected to the workplace. Other intervention components included those aimed to improve the skills and job readiness of participants, work-focused problem-solving skills, vocational training, skill development sessions, or career guidance. Five systematic reviews included studies considering structural and systems-level interventions such as financial incentives or anti-discrimination legislation.

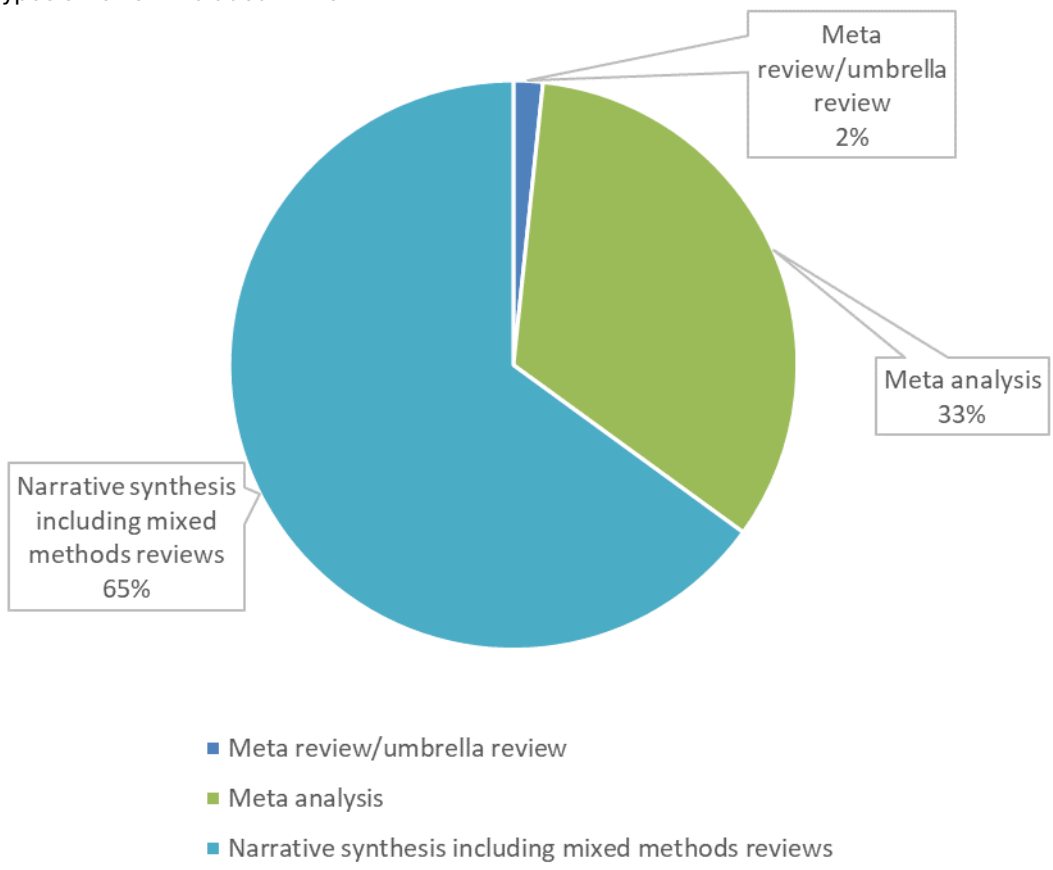
When reported, workplaces were the most common setting for intervention delivery, such as ergonomic assessments or workplace engagement with employers in various capacities. Health facilities were mentioned as a setting for interventions related to occupational health services, primary care, rehabilitation centres, and hospital outpatient settings. Six systematic reviews included studies focusing on community participation [45 46].

Nearly all systematic reviews reported employment-related outcomes, which aimed to improve employment rates, job tenure, days/hours of working, job changes, and return to work (RTW) rates. However, the unit analysis of the outcome measures used in the individual studies varied greatly (e.g. work hours, paid employment, income, no. of weeks or days worked, tenure of competitive employment, no. of jobs, or time (days/weeks) until return to work). Other employment outcomes included job satisfaction, work productivity, and competitive employment rates. A wide range of health and well-being outcomes reported included social functioning, quality of life, psychiatric symptoms, self-esteem, well-being, quality-adjusted life years (QALYs), functional disability, pain intensity, self-rated health, depression, and mental health disorders. Fourteen systematic reviews reported costs as one of the outcomes of the reviews.

The majority of the reviews employed a narrative synthesis approach to synthesise the findings from primary studies (65%, n =39), of which six included economic evaluations. This synthesis approach allowed for integrating qualitative and quantitative data or when quantitative meta-analysis could not be performed due to heterogeneity. These narrative systematic reviews often included various study designs, from randomised controlled trials (RCTs) to observational, qualitative, and non-randomised studies.

Twenty systematic reviews performed a meta-analysis, statistically combining effect sizes reported in the included primary research and subsequently were included in the second stage of this RER to narratively report the findings of the effectiveness of the interventions designed for individuals with poor health. We identified a systematic review of reviews investigating the effect of job demand and control interventions on absenteeism, productivity, and financial outcomes. [47](Figure 3.2). Twenty systematic reviews were judged to be high quality, 28 medium quality, eight low quality, and three critical low.

Figure 3.2: Types of review included in the RER



3.2.1 Systematic reviews of interventions aiming to support individuals with mental health (k=27)

Twenty-seven systematic reviews investigated the effectiveness of interventions to address individuals with mental health conditions. Studies included in these reviews were mainly from European countries (k= 16) such as the Netherlands, Denmark, and Norway, USA (k=14), Canada (k=12), UK (k=9), and Australia (k=7).

Most systematic review reviews (k=17) used narrative synthesis, while ten employed meta-analysis. A wide range of interventions designed for people with mental health problems were reported in the systematic reviews, ranging from occupational therapy, CBT, psychiatric consultation, digital health, and stress-related interventions to psychoeducation. Interventions were categorised as person-directed (k=23), workplace-focused (k=4), or multi-level/multi-component (k=6). Person-directed interventions included Individual Placement and Support (IPS) (k=13), supported training/education (k=4), CBT (k=6), and traditional vocational rehabilitation (k=3). Education interventions such as supported education and skill development were less commonly reported in the systematic reviews.

When reported, eleven systematic reviews investigated the impact of the interventions on the mental health of employed workers and three systematic reviews on individuals with mental health who were unemployed or not currently seeking employment. Two systematic reviews investigated the impact of employment and income support for young people with mental health conditions [36,48]. Nearly all systematic reviews (k=25) investigated interventions that have employment or labour market components as part of the interventions. Other outcomes reported were health-related outcomes (k=14), social outcomes (k=2), cost/cost-effectiveness (k=7), knowledge attitudes, awareness, and satisfaction (k=7).

3.2.2 Systematic reviews of interventions aiming to address employment outcomes for individuals with sickness absence and poor health (k=25)

In this group, the systematic reviews included participants from different groups, those with mental health conditions (k=16), physical health conditions (k=19), learning disabilities (k=2) or multiple conditions, or where health conditions or impairments were not specified. These systematic reviews often considered studies that included participants with mental health and physical health illness in the synthesis. Nine systematic reviews investigated the effectiveness of interventions aiming to support workers on sick leave to return to work.

More than half of the systematic reviews in this group employed a mixed methods or narrative approach to synthesis (k=16), followed by systematic reviews with a meta-analysis (k=8), with one was a review of systematic reviews. Of 25 systematic reviews, twenty systematic reviews included employment-focused interventions such as RTW interventions. These interventions were designed for people with short-term and long-term health conditions, including interventions aimed at supporting the maintenance of work and facilitate return to work after an absence. Return-to-work interventions were often multicomponent in nature and may include health-focused, educational, and/ or social and well-being components. Health intervention components included occupational therapy or psychological therapies such as CBT or other psychological treatments. Other approaches included coaching and education about managing conditions and fatigue, as well as workplace education, financial support, and support for travel and stress management techniques.

When the intervention was focused on individuals with any condition that has resulted in sickness absence, this was usually set in the workplace. Seventeen systematic reviews were set in the workplace compared to eight reviews set in a health facility. The most common measures reported were the numbers of workers/percentage who returned to work, work absences, or time taken to return to work. Six systematic reviews reported cost-effectiveness measures.

3.2.3 Systematic reviews of interventions aiming to support individuals with poor physical health and disabilities (k=6)

Six systematic reviews assessed the impact of interventions for people with poor physical health and disabilities, with a publication date between 2010 and 2023. All but one reported outcomes through narrative synthesis. One systematic review performed a statistical meta investigating the impact of workplace interventions on low back pain in workers [49]. Three systematic reviews considered individuals sickness absence [40,45,50]. When reported, five systematic reviews aimed to evaluate interventions designed for employed workers. Health conditions reported in the systematic reviews included acute or subacute non-specific low back pain, workers who had a musculoskeletal disorder and ill-health retirement due to mild to moderate mental health problems, and musculoskeletal and cardio-respiratory conditions.

Three systematic reviews investigated work-focused interventions [40,49,51]and three were multicomponent interventions [50 45,52]. Health component interventions included exercise therapy/physical activity (k=2), rehabilitation (k=2), and one each on health impairment management, treatment, occupational therapy and cataract outreach program. Education skill training component interventions included: supported education, career guidance, behavioural change techniques and skill development. Social and structural intervention focus may include financial incentives, loan schemes and wheelchair provision, and community-based rehabilitation (CBR). Interventions took place in the workplace (k=6), health facilities (k=1), government agencies (k=1), workplace and community (k=1).

Return to work-related outcomes was the most reported outcome (k=5), other employment-related outcomes included employment status, job duration, productivity, job loss, job retention, or work absence. Sickness absence was reported in two reviews [50 45]; other reported health-related outcomes included functioning and pain. Other outcomes included work motivation and work awareness. Two systematic reviews focused on individuals with physical health and disabilities reported economic outcomes [40 51].

3.2.4 Systematic reviews of Interventions aiming to address labour market participation for individuals with learning disabilities (k=2)

Two systematic reviews investigated the effectiveness of interventions designed for individuals with learning disabilities [53 29]. One review investigated the effectiveness of rehabilitation interventions for people with learning disabilities**.** The other systematic review quantitatively examined the effect of cognitive technology to support people with intellectual and developmental disability on employment-related outcomes including work-related social skills and vocational task performance [53].

Chapter 4: Synthesis of findings from systematic reviews of effectiveness of interventions aiming to address economic inactivity for individuals with poor health and disabilities

This chapter summarises the findings from systematic reviews of interventions aiming to address economic inactivity for individuals with poor health and disabilities in answer to RQ1. To provide a clearer understanding of intervention effectiveness, we provide a summary of the findings of the systematic reviews and the meta-analysis (SRMA), which provide a more coherent, robust picture of understanding the effectiveness of interventions. When no findings from SRMA are reported, we present the findings from narrative systematic reviews (NSR) judged to be of high to moderate quality. The chapter is organised by the population focus of the systematic review and by type of intervention. It is presented in the following sections: 4.1 interventions for individuals with sickness absence or with poor health, 4.2 interventions for individuals with mental health, 4.3 interventions for individuals with physical health, and 4.4 interventions for individuals with learning disabilities.

4.1 Effectiveness of interventions aiming to address economic inactivity for individuals with mental health conditions

4.1.1. A descriptive overview of systematic reviews and meta-analysis (k=10)

Twenty-seven systematic reviews examined the effectiveness of interventions targeting individuals with mental health issues in improving labour market participation. Ten of these systematic reviews employed meta-analysis (SRMA) [22,28,34,36,54-59] , whilst 17 used narrative synthesis to summarise findings. Of the ten SRMAs, six were judged to be high quality and four at moderate when applying the AMTAR 2 checklist [43]. In the next sections, we summarised the findings of the SRMAs by level and type of intervention (see Figure 2.6).

Table 4.1: Key characteristics of interventions aiming to support individual with mental health conditions

Study	Population focus	Intervention details	Characters of studies included	Countries
Bond et al., 2023 [36] Moderate quality	Young adults with early psychosis	**Person-centred interventions:** IPS	7 studies 697 participants Overall quality: unclear	USA, Canada, Australia, Denmark, and Norway
Brinchmann et al., 2020 [54] Moderate quality	Individuals with moderate/severe mental health, first episode of psychosis, Post Traumatic Stress Disorder. Some studies included participants with history of involvement in the criminal justice system or disability benefit recipient	**Person-centred intervention:** IPS	27 studies 6,651 participants Overall quality: moderate to high	Japan, China, Hong Kong, Australia, Canada, USA, Italy, Switzerland, Germany, Netherlands, Norway, Sweden, Denmark, UK
Modini et al., 2016 [22] High quality	Individuals with severe mental illness	**Person-centred interventions** IPS	19 studies N = not stated Overall quality: fair-good quality	UK, Germany, Italy, Switzerland, The Netherlands, Bulgaria (one multi-centred RCT), UK, Switzerland, Australia, Japan, Hong Kong
Kinoshita et al., 2013 [34] High quality	Unemployed adults with severe mental illness	**Person-centred intervention:** Supported employment, IPS, augmented	14 studies 2,265 participants	USA, Canada, Australia, The Netherlands, Germany, Switzerland, Italy,

Study	Population focus	Intervention details	Characters of studies included	Countries
		supported programmes (those with other interventions such as social skill training) and other vocational approaches	Overall quality: low	Bulgaria, Hong Kong, China
Chan et al., 2015 [55] Moderate quality	Individuals with severe mental health conditions (mean age = 36.4)	**Person-centred intervention:** A rehabilitation treatment: Computer-Assisted Cognitive Remediation	9 studies 740 participants Overall quality: good	USA, Germany, Italy, Singapore, Japan
Suikerbuijk et al., 2017 [28] High quality	Unemployed with severe mental illness, mean age = 36 year, 63% male	**Person-centred intervention** Supported employment, augmented supported employment, prevocational training, transitional employment	48 RCTs 8,743 participants Overall quality: Moderate to low quality	North America, China, the UK, Australia, Japan the Netherlands, Bulgaria and Switzerland.
Mikkelsen and Rosholm (2018) [56] High quality	Sick-listed workers with mental health disorders (common health disorders and stress-related disorders, depression and somatoform disorders)	**Multifaceted, multi -level RTW interventions**	31 RCTs and 8 CTs 9459 participants Overall quality: high and fair quality	Not clear but include Denmark, Sweden, Germany and the Netherlands in the analysis

Study	Population focus	Intervention details	Characters of studies included	Countries
Nigatu et al., 2016 [57] High quality	Workers who were absent from work due to Common Health Disorders	**Multi-faceted-multilevel RTW intervention**	16 RCTs 3,345 participants Overall quality: unclear	Not stated
Nowrouze-Kia et al., 2023 [58] Moderate quality	Workers with mental health conditions that is work-related or from workplace environments	**Multifaceted, multi -level RTW intervention**	28 studies N= not stated Overall quality: low-medium risk of bias	UK, USA, Canada, Sweden, the Netherlands, Denmark, Germany, Switzerland, Australia, Turkey
Nieuwenhuijsen et al., 2020 [59] High quality	People with a major depressive disorder or a high level of depressive symptoms.	**Person-centred intervention** CBT **Multifaceted, multi -level RTW interventions**	45 studies 12,109 participants Overall quality: The most common types of bias risk were detection bias and attrition bias	Europe, the USA Australia, and Canada

4.1.2 Person-centred interventions for people with mental health conditions:

More than half of the SRMAs focused on the effectiveness of person-centred interventions (k=7), whilst four reported the effectiveness of multilevel interventions designed for individuals with mental health conditions [56-59]. Among the person-centred interventions, five SRMAs considered Individual Placement and Support (IPS)[22,28,34,36,54]. Other systematic reviews examined prevocational training [28]; supported training and education programmes [28,55], treatment and medication [28]. One SRMA investigated multiple types of interventions including work-directed interventions, psychological interventions, medication and treatment, and the combination of these components [59].

- Bond and colleagues investigated the impact of IPS on employment and education related outcomes in young people with mental health problems [36]. The review included seven RCTs with 697 participants. Key characteristics of IPS were reported as: a) competitive employment, b) inclusive, c) individual needs, d) rapid job searches, e) target job development, f) integration of employment services with mental health treatment, g) personalised counselling, and h) ongoing support. Nearly all included RCTs used a standard IPS fidelity scale. In the review, four RCTs assessed the impact of IPS on young people with a first episode of psychosis through the Early Psychosis Prevention and Intervention Centre in Australia, one for IPS for young people in the USA, and one for RCT IPS delivered in a community setting in Canada. Three RCTs performed a sub-group analysis for young adult participants (30 years old and under) in Denmark, Norway, USA.

- Modini and others (2016) assessed the effectiveness of moderate-high fidelity IPS for people with severe mental illness compared with traditional vocational services. The review included 19 RCTs conducted in countries in Asia and Australia (k= 4), Europe (k=6), and North America (k= 9). Meta-regression was performed to analyse the association between IPS effectiveness and geographical regions, unemployment rate, and GDP growth. The authors also performed meta-analyses to explore whether the impact of IPS would be sustained beyond 24 months [22].

- In Brinchmann et al., 2020 study [54], the authors also explored contextual factors that might influence the effectiveness of IPS. The aim of the study by Brinchmann and colleagues was to examine whether IPS is effective and can be generalised to other country settings. The review included 27 RCTs with 6651 participants and performed a meta-regression analysis to investigate the association between IPS efficacy and key characteristics of four OECD countries and whether IPS may be more effective in countries with less generous social welfare systems. The overall efficacy was established by meta-analyses of the included studies and the country-specific data from the OECD and the World Bank.

- Another review by Kinoshita and colleagues (2013) [34] examined the effectiveness of supported employment programmes and IPS on vocational outcomes. The review included 14 RCTs with 2265 participants with mental health illness. 13 studies implemented IPS and one supported employment programme (The Clubhouse Model, and assertive community treating including support employment) (Macias et al., 2006). Nealy all was conducted in community mental health services in 10 countries (one study were multi-centre RCTs).

- Chan et al., 2015 assessed the effect of computer-assisted cognitive remediation (CACR) on mental health, employment rate, number of days worked in a year,

earnings and productivity outcomes [55]. CACR is a training programme with instruction and group activities aiming to improve attention, concentration, working memory and other functions. The interventions were delivered between two months to two years. The review identified nine studies (8 RCTs and one controlled study) with 740 participants recruited from inpatient (k=2) and outpatient (k=7) settings. Cognitive exercises were commonly used in the intervention (k=5). The studies included in the review were conducted in the USA, Germany, Italy, Singapore, and Japan.

- Suikerbuijk and others investigated 42 RCTs with 8743 participants [28]. The review compared the effectiveness of various types of vocational rehabilitation on competitive employment in adults with severe mental health conditions. The review considered all types of vocational rehabilitation: 17 prevocational training programmes (e.g. job-related skill training), six transitional employment interventions (sheltered workshop, social enterprise, and clubhouse model), 30 supported employment programmes including IPS high and low fidelity, 13 augmented supported employment (supported employment with other vocational training programmes). The majority of the studies included in the review were carried out in North America (k=30). Five studies were carried out in China, four in the UK, three in Australia, two in Japan and one each in the Netherlands, Bulgaria and Switzerland.

- The 2020 Cochrane review by Nieuwenhuijsen and colleagues considered a wide range of interventions [59]. Two of these was psychological supports, either face to face or e-Health. and improved care. Psychological supports included CBT, problem solving approaches or a combination of the two. Psychological approaches with anti-depressant medication were also analysed. Improved care management might involve general practitioners aiming to provide enhanced care including antidepressant medication and psychological interventions, according to primary care guidelines. The review included 45 studies in 12,109 people with depression and took place in Europe (34 studies), the USA (8), Australia (2) and Canada (1).

Key findings

Interventions with evidence of positive findings

- **IPS for young people with mental health conditions** was found to have a positive impact on competitive employment when adjusted for employment at baseline (k = 7, RR = 1.79, 95% CI = 1.48, 2.17, I^2 = 0%). The meta-analysis also suggested that participants who received IPS had significantly longer durations of employment than those in control groups (k =7, g= 0.34, 95% CI 0.09, 1.24; I^2 =59%)[36].

- **IPS for individuals with severe mental health conditions** Findings from the meta-analysis of 17 studies showed that IPS was effective in facilitating people with severe mental health to gain competitive employment when compared with traditional vocational rehabilitation (k= 17, RR = 2.40, 95% CI 1.99. 2.90, I^2 = 66.5%). The sub-group analysis of 13 RCTs found that IPS remained effective within 13-24 months in supporting individuals with severe mental health to gain competitive employment (RR = 2.41, 95% CI 1.96, 2.97, I^2 = 69.4%). In addition, the findings from meta-regression suggested that there was no association between the unemployment rate or study location (Australia, Europe, or North America) and the IPS effectiveness. The review, however, found that IPS appeared to be more effective in countries with higher GDP growth (b = 0.13, S.E =0.59, 95% CI 0.00, 0.25) [22].

  Another review by Brinchmann and others (2020) [54] found IPS more than twice as effective in facilitating people with mental health conditions into competitive employment when compared to traditional rehabilitation (k= 27, RR= 2.07, 95% CI 1.82, 2.35, I^2 =59.82%). The study also found a decrease of IPS efficacy over follow-up time (log (RR) = -0.36, 95% CI -0.66, -0.005, p =0.047). The review found a marginal decrease in the efficacy of IPS in the countries with strong legal protection for a 'hire and fire' policy (log (RR) = -0.15, 95% CI -0.28, -0.02, p = 0.025). However, it found no evidence to support the effectiveness of IPS was moderated by the generosity of disability benefits (p=0.23), the integration policy for employment (p =0.08), legal protection for temporary contracts (= 0.14), market conditions such as GDP growth (p = 0.54), disability welfare benefit rate (0.56), the employment rate of people with low education (p=0.76).
- **Supported employment programme** found to be effective in increasing duration (days) in any form of paid employment (k=2, MD = 84.94, 95% CI 51.99, 117.89, I^2 =46%), gained employment (k=7, RR = 3.24, 95% CI 2.17, 4.82, I^2 =74%) compared to other vocational interventions such as sheltered workshops, prevocational training. Job counselling, and the Clubhouse Model [34]. The findings from the review by Suikerbuijk and colleagues also found that supported employment was more effective than transitional employment (RR =3.49, 95% CI 1.77, 6.89) and prevocational training (RR = 2.52, 95% CI 1.21, 5.24) for obtaining competitive employment [28]. In addition, at more than 12 months follow-up, augmented supported employment (RR = 4.32, 95% CI 1.49, 12.48), and support employment (RR =1.51, 95% CI 1.07, 4.46) were more effective than the psychiatric care only. In network meta-analysis, the findings from 22 studies with long term follow up, augmented support interventions were the most effective intervention when compared to psychiatric care only in supporting participants to gain competitive employment (RR =3.81, 95% CI 1.99, 7.31). Supported employment and augmented supported employment were also found to be effective in supporting individuals with severe

mental health to maintain competitive employment in short-term evaluation when compared to psychiatric care-only interventions.

- **A computer-assisted cognitive remediation training programme** found to have a positive effect on employment rate (RD =20%; 95% CI 5%, 35%. I^2 = 77%) [55], total days of work in year (n = 7, 19.5 days longer, compared to those without the intervention with significant heterogeneity among the study (k= 7, 19.5 days, 95% CI 2.5, 36.6 days, I^2 91%), total annual earning with participant in CACR significantly earned $959 more than those in the control group (k=7, 95% CI $285, $1634, I^2 94%). Findings from subgroup analyses indicated that participants who participated in CACR with work therapy programmes showed a significantly higher employment rate (k=3, RD = 13%; 95% CI = 2%, 24%) and higher annual income (k=4, MD =$162, 95% CI $38, $ 287) than those who did not participate in the programme. CACR with support employment programme also showed effectiveness in increasing annual earnings of those who participated in the programme compared to the control group (k=4, MD = $1202, 95% CI £127, $2256). Participants who received 24-h of the programme showed significant improvement (k=5, MD =30.6 days, 95% CI -0.2, -61.8) compared to those who did not receive the training programme.
- **Psychosocial supports** either delivered by face-to-face, or an E-mental health intervention with or without guidance from a care provider, with care as usual showed a smaller number of sickness absence days (k =9, SMD -0.15, 95% CI -0.28, -0.03, I^2 =0%) [59].
- **Improved care management** did not lead to fewer sickness absence days (k =7, SMD -0.05, 95% CI -0.16 to 0.06, I^2 =14%)[59].

Table 4.2: Person-centred interventions: Key findings from SRMAs

Interventions	No. of reviews with meta-analysis findings	Key findings
Supported employment and IPS	Five reviews (two moderate quality, three high quality) [22,28,34,36,54]	- Competitive employment (+), and can be generalised between countries [54], and found to be sustainable at 24 months [22]. - Job duration (+) [34,36]
Rehabilitation approach- Computer Assisted Cognitive Remediation (CACR)	One review (moderate quality) [55]	- competitive employment (+) - Total days of work in a year (+) - Total annual earning (+)

Interventions	No. of reviews with meta-analysis findings	Key findings
Psychosocial support	One review (high quality) [59]	Sickness absence days (+)
Improved care management	One review (high quality) [59]	Sickness absence days (=)

(+) statistically significant positive; (-) statistically significant negative; (=) no statistically significant difference

4..1.3. Multilevel multicomponent interventions for people with mental health conditions:

Four SRMAs investigated the effectiveness of multilevel multi-component RTW interventions for individuals with mental health disorders [57,59 56 58] .

- Mikkelsen and Rosholm (2018) included 39 studies (31 were RCTs, and eight were controlled studies with 9459 participants, published between 2003 to 2017). All RCTs were judged to be at high to fair quality. The systematic review included various models of RTW interventions including early intervention focusing on problem-solving, CBT, IPS, minimal intervention, training for health professionals, collaborative care, multidisciplinary teams to working participants, stress-management training, and rehabilitation, often incorporating components such as organisational change, graded RTW, therapy, and/or workplace contact [56].
- Another review by Nowrouze-Kia et al., 2023 examined the impact of RTW interventions on workers with related mental health conditions. The review included 28 studies employing different types of research methods (19 RCTs and 9 quasi-experimental studies). The RTW interventions were categorised into four main types: health-focused interventions (CBT =4, psychotherapy = 5. Occupational therapy =2), service coordination interventions such as work dialogue meetings, meetings seminars, interviews between employee and supervisor (k=3), work-related interventions including stress management, daily practice techniques (k=1), psychodynamic online interventions (k=1) and multi-domain interventions(k=12) [58].
- The 2020 Cochrane review by Nieuwenhuijsen and colleagues considered interventions at the workplace-worker interfaces such as reduced hours or modified tasks combined with clinical or psychological supports, either face-to-face or e-health, and compared this multilevel mode of delivery against work-related interventions only, improved psychological treatments with work adaptations or

usual psychological treatment only with no work adaptations. Psychological supports included CBT, problem-solving approaches or a combination of the two, or psychological approaches with anti-depressant medication. The review included 45 studies in 12,109 people with depression and took place in Europe (34 studies), the USA (8), Australia (2) and Canada (1) [59].

- Nigatu et al., 2016 reviewed and assessed clinical and workplace interventions using CBT approaches for workers who were on sick leave due to common health conditions and work-related stress. The review included 16 RCTs with 3345 participants. A wide range of RTW interventions were identified and included in the systematic review. RTW interventions may include different types of intervention components, ranging from CBT, problem-solving strategies, and psychoeducation to coordinated and tailored work rehabilitation, as well as a collaborative and multidisciplinary approach working with occupational therapists and psychiatrists. However, all RTW employed CBT approaches in their RTW programming [57].

Key findings

Based on four SRMAs, multilevel component RTW interventions were found to be effective on time to RTW, had no impact on RTW rate, and showed mixed findings on absenteeism. One SRMA investigating **RTW interventions for sick listed workers for common mental disorders** were found to be effective in reducing time until RTW (k = 33, effect size = 0.14, 95% CI 0.07, 0.22, I^2 = 67.8%). The findings from the meta-regression suggested that RTW interventions aimed at sick-listed workers due to stress were more effective, showing the largest effect sizes (b= 0.22, S.E. 0.09, 95% C.I. 0.03, 0.42) when compared to other mental health conditions such as depression (effect size = 0.04). The effectiveness of the RTW was not associated with studies from Denmark and Germany compared to those conducted in Sweden and the Netherlands. The review also found that interventions that included contact to workplace (effect size =0.21, S.E. 0.09, 95% C.I. 0.03,0.39, $p < 0.05$) or those with more than two intervention components tended to have be more effective compared to other intervention components[56].

Another type of multilevel and multicomponent programmes that combined work directed interventions (such as adaptations to tasks and working hours, meeting with intervention providers and supervisors) combined with clinical care may reduce sickness absence days within the first year of follow-up (k =9, n =1,292, g= -0.25 95% CI -0.38, -0.12) [59]. In addition, RTW interventions that include clinical OR work-focused interventions in the intervention design the review found a significant impact on reducing sick days until work when comparing between RTW with CBT interventions (average sick leave = 151 days (S.D. =95) and the control group (average sick leave days 165 days (S.D. =103) (k=6,-13.38 days, 95% CI -24.07, -2.69, I^2 = 10%).

However, the findings from the meta-analysis of various types of RTW interventions including health-focused, service coordination, work-related and multi-domain interventions, showed a small, nonsignificant positive effect on RTW rate when compared to the control groups (k=10, RR = 1.02, 95% CI 0.92, 1.12) [58]. Similarly, RTW interventions that include clinical OR work focused interventions in the intervention design found no clear evidence of the impact of the RTW interventions on the RTW rate when compared to control group for people with common mental disorders (CMDs) (k= 16, RR =1.05, 95% CI 0.97, 1.12, I^2 54%)[57]. The SRMR by Nowrousi-Kia and others (2023) also reported that multilevel RTW interventions appeared to have no effect on absenteeism (k= 5, SMD = -0.20, 95% CI -0.42, 0.02)[58].

Table 4.3: Multilevel multicomponent interventions: Key findings from SRMAs

Interventions	No. of reviews with meta-analysis findings	Key findings
Multi components RTW interventions	Four reviews (three high and one moderate quality [56-59]	Time to RTW (+) [56] Sickness absence days (+) [57,59] Absenteeism (=) [58] RTW rate (=) [57,58]

(+) statistically significant positive; (-) statistically significant negative; (=) no statistically significant difference

4.2 Effectiveness of interventions aiming to support individuals with poor physical and/or mental health conditions

4.2.1. A descriptive overview of systematic reviews and meta-analysis (k =8)

Of the 25 systematic reviews examining interventions for labour market participation among different population groups (e.g. those with sickness absence due to physical and mental health conditions), Eight employed meta-analysis to assess the impact on return-to-work and labour market-related outcomes, with four deemed to be high quality [46,60-62] and the other four at moderate quality [27,42,63,64]. Eight systematic reviews focused on workers on sick leave, and one included participants with various health conditions [46]. The remaining 17 systematic reviews employed a narrative review approach. The quality of the narrative systematic reviews varied, with three being judged to be high quality, eight being moderate, and five being low or critical low, based on the AMTAR 2 checklist adapted for this RER [43]. One systematic review of reviews explored the impact of job demand and control interventions on workplace disability, particularly absenteeism, productivity, and financial

outcomes [47]. A summary of the narrative systematic reviews of the effectiveness of interventions aiming to address economic inactivity for individuals with poor health and disabilities is presented in Appendix E. See Table 4.4 for key characteristics of SRMA for individuals with poor physical and/or mental health.

Table 4.4: Key characteristics of systematic reviews focusing on sickness absence or individuals with poor health

Study	Population focus	Intervention details	Characters of studies included	Countries
Finnes et al., (2019) [63] **Moderate**	Sick leave Mean age = 42.2 years, 57.8% females Mean duration of sick leave before intervention = 39 weeks	**Person-centred interventions:** Psychological treatment/therapy	30 studies 4024 participants RCT only Overall quality: low	USA, Sweden, the Netherlands, Denmark, Norway, Germany, Spain
Xu et al., 2023 [27] **Moderate**	Workers on sick leave	**Person-centred interventions:** CBT	30 studies 6065 participants RCT only Overall quality: moderate to high	USA, Canada, Germany, the Netherlands, Denmark, Sweden, Norway, Spain
Tingulstad et al., 2022 [64] **Moderate**	Workers with (at risk) long term sick leave (1-24 months)	**Person-centred interventions:** Overall-Multidisciplinary rehabilitation, W-CBT, occupational therapy, stress reduction programmes, dialogue meetings, workplace interventions	20 studies 5753 participants RCT only Overall: low	Sweden, Denmark, the Netherlands, Norway

Study	Population focus	Intervention details	Characters of studies included	Countries
Vargas-Prada (2016) [42] **Moderate**	Workers on sick leave less than 15 days	**Person-centred interventions:** Early workplace interventions by employers	3 studies N = Not stated RCTs and other non RCTs Overall quality: high	The Netherlands and Finland
Schandelmaier et al., (2012) [60] **High**	Workers on sick leave at least four weeks or on disability benefit	**Workplace focused interventions:** stakeholders: RTW coordinators	9 studies 3422 participants RCT only Overall quality: moderate	UK, USA, Canada, the Netherlands, Sweden, Belgium, Denmark
Vogel et al. 2017 [61] **High**	Workers on sick leave for at least four weeks	**Workplace focused interventions:** stakeholder engagement- RTW coordination programme	14 studies 12568 participants RCT only Overall quality: low to moderate	UK, USA, Canada, Belgium, Denmark, the Netherlands, Norway, Sweden, Switzerland
Van Viliseren et al., 2015 [62] **High**	Sick leave with musculoskeletal conditions, mental health conditions, and workers with cancer	**Workplace focused interventions:** Overall workplace interventions	14 studies 1897 participants RCT only Overall quality: mixed	USA, Canada, Sweden, The Netherlands, Denmark
Gross et al., 2020 [46] **High**	Adult (18 years and older) with physical health (e.g. traumatic brain injuries, ageing related disabilities), mental health and learning disabilities	**Multilevel multicomponent interventions**	15 studies 7078 participants RCTs with quasi-experimental designs Overall quality: high quality (k=2)	USA, Germany, Italy, Australia, China

Study	Population focus	Intervention details	Characters of studies included	Countries
			and acceptable quality (k=15)	

4.2.2 Person-centred interventions for individuals with poor physical and/or mental health conditions

Of eight SRMAs, four examined the impact of person-centred interventions such as psychosocial treatment programmes using CBT modalities, multidisciplinary rehabilitation for workers and individuals with poor physical and mental health conditions or on sickness absence, and early interventions such as workplace occupational therapy programmes [27,42,63,64].

- Finnes et al. (2019) examined the impact of psychosocial interventions in reducing sickness absence in workers who had common mental health disorders (e.g. depression, anxiety, stress) and musculoskeletal disorders, compared to a waiting list control group, usual care, or another active intervention [63]. The review included 30 RCTs with 4024 participants (mean age 42.2 years and 57.8% females) on sick leave. The interventions included in the reviews were a diverse group of CBT-based approaches such as work-focused CBT, multimodal CBT, acceptance and commitment therapy (ACT), stress management therapy, web-based CBT, exposure therapy, and mindfulness-based stress reduction therapy. Other interventions included in this review were problem-solving therapy, solution-focused therapy, guided imagery and music. These interventions were delivered in groups (k =8), individually (k=18), or a combination (k=3), commonly by a psychologist, occupational physician, psychotherapist, physical therapist, social worker, and multimodal team. The number of sessions reported was, on average, 18 sessions, ranging from 4-80 sessions, with a mean treatment time of 39 minutes, delivered in various settings, including occupational health services, primary care, rehabilitation centres, and university clinics. One-third of the interventions included work-focused components in the intervention groups.
- Xu et al., (2023) examined the effectiveness of CBT-based interventions for supporting workers to return to work from sick leave from musculoskeletal conditions, mental health, or unexplained issues such as fatigue [27]. The review included 30 RCTs with 6065 participants. The interventions consisted of CBT techniques such as homework assignments, stress management, problem-solving strategies and rehabilitation. Several interventions were classified as combined CBT, where multimodal CBT combined with a work-focus component such as motivational interviews, functional training modules, or occupational adjustment.

The CBT-based interventions were delivered both in groups or on individuals in diverse settings such as rehabilitation centres, online, or workplaces.

- Vargas-Prada et al., (2016) reviewed the impact of workplace interventions delivered to workers with less than 15 days or less of sickness absence [42]. It aimed to understand various factors to provide a complete picture of evidence on sickness absence. The review found limited evidence from three RCTs. These studies focused on participants with mental health issues (police workers), low back pain (health care and university workers), and musculoskeletal conditions (workers from enterprises). Two of the interventions were guideline-based care interventions delivered to individuals with mental health. The interventions focused on counselling, case management, and occupational therapy models delivered by occupational health professionals in the Netherlands. The other intervention conducted in Finland aimed to reduce daily working time for workers with musculoskeletal pain compared to workers who were allocated to full-time sick leave. The programme was delivered in occupational health services by occupational therapists.
- Tingulstad et al., 2022 examined the impact of work-related interventions for individuals with long-term sick leave or at risk of long-term sickness [64]. These interventions aimed to support individuals to RTW and address barriers of long-term sick leave for RTW. The review included 20 RCTs with 5753 workers on sick leave due to various health conditions, including depression, stress reactions, work-related stress, adjustment disorder, common mental health disorders, and/or musculoskeletal issues. Interventions consisted of various intervention approaches, including multidisciplinary rehabilitation, work-focused CBT, occupational therapy, additional dialogue meetings, and workplace interventions, delivered between three weeks to eight months in different settings such as inpatient or outpatient clinics, workplaces or online.

Key findings

Interventions with evidence of positive findings:

- **CBT-based interventions** refer to CBT as a compulsory component and can be combined with other CBT techniques such as homework assignments, stress management, relapsing preventions, problem-solving strategies, and rehabilitation. The review found that these CBT-based interventions were more effective than the control interventions in reducing sick leave with a mean reduction of -3.649 days (n = 15, 95%CI -5.253 to – 2.046; $p < 0.001$) with the effect size of -0.395 (k= 15, 95% Cl – 0.670, – 0.120, $I^2 = 92.991$; $p<0.001$) and facilitating people to RTW 1.5 days earlier (k= 16, 95% CI 1.019, 1.722, $p < 0.05$; $I^2 = 32.998\%$, $p >0.05$).
- The authors performed a subgroup analysis and identified key characteristics of effective interventions. The CBT-based interventions were found to be more effective when having:

- Face-to-face delivery (MD − 8.673, 95% CI − 15.550, − 1.797, p < 0.05),
- Participants with higher education levels (> 12 years) (0.923, 95% CI − 1.206, − 0.639, p < 0.001)
- Utilisation of rehabilitation services (MD − 10.095, 95% CI − 11.902,− 8.288, p < 0.001),
- Stress management (MD − 3.498, 95% CI − 5.110, − 1.886, p < 0.001), and
- Long treatment course (≥ 16 weeks) (MD 2.747, 95% CI − 4.169, − 1.326, p < 0.001).

CBT-based interventions showed a better effect on **sick leave** in studies that included homework assignment (MD − 2.615, 95% CI − 4.017, − 1.213, p < 0.001), mood management (effect size − 0.926, 95% CI − 1.209, − 0.643), p < 0.001), long duration of sessions (≥ 90 min) (MD − 9.951, 95% CI − 17.633, − 2.269, p < 0.05), combined CBT (MD − 14.785, 95% CI − 22.898, − 6.672, p < 0.001) and those delivered in group sessions (effect size − 9.476, 95% CI − 11.247, − 7.704, p < 0.001) [27].

- **Psychological treatments including CBT, problem-solving theory, psychodynamic therapy, multimodal CBT and motivational interviewing** appeared to have a positive impact on RTW continuous outcomes (e.g. days to partial RTW or days to full RTW, or increased working hours) when compared to comparison groups (k =23, g = 0.16, p<0.01; 95% CI 0.04, 0.27, I^2 =41.22%). When different health conditions were considered, the psychosocial programmes and psychotherapy were found to have no statistically significant differences in individuals with mental health (k =12, g = 0.15, 95% CI − 0.04, 0.33). However, these interventions were found to be effective in individuals with musculoskeletal disorders (k =9, g = 0.23, 95% CI 0.10, 0.37). The review also found that the psychological treatment programmes appeared to have a positive impact on **proportions of participants RTW** when compared to the comparison groups (k = 23, OR = 1.43, 95% CI 1.06, 1.92, I^2 =54%) [63].

Interventions with evidence of no effect:

- **Early interventions in the workplace** delivered to workers with less than 15 days of sickness absence had no significant differences on time until RTW (k=3, HR = 1.30, 95% CI 0.91, 1.85, I^2 = 64%) [42].
- **Multidisciplinary rehabilitation programmes** in different settings such as inpatient- or outpatient clinics, day visits or overnight stays had no statistically significant difference when compared to usual care groups on RTW-related outcomes (such as a time to RTW or time to sustainable RTW, days on sick leave, the proportion of participants at work, sick leave, or work status) (k=3, RR = 1.01, 95% CI = 0.70 ,–1.48) or when compared to other active interventions for 12 months follow-up (k=5, RR = 1.04, 95% CI = 0.86–1.25) or 24 months follow-up (RR 0.94, 95% CI = 0.84, –1.05) [64].

Table 4.5: Person-centred interventions: Key findings from SRMA

Interventions	No. of reviews with meta-analysis findings	Key findings on RTW-related outcomes
Psychological treatment, including CBT based interventions	Two reviews (two moderate quality) [27,63]	RTW related outcomes (e.g. days to partial RTW or days to full RTW, or increased working hours) (+) Proportions of people RTW (+) Sick leave (+), days to RTW (+)
Early interventions in the workplace	One review (moderate quality) [42]	Time until RTW (=)
Multidisciplinary rehabilitation	One review (moderate quality) [64]	RTW related outcomes (=)

(+) statistically significant positive; (-) statistically significant negative; (=) no statistically significant difference

4.2.3 Workplace focused interventions for individuals with poor physical and/or mental health conditions

Three SRMAs focused on workplace focused interventions [60-62]

- Two SRMAs [60,61] examined the effectiveness of workplace-focused interventions focusing on RTW coordination programmes. Schandelmaier and colleagues (2012) included nine RCTs from seven countries (UK, USA, Canada, the Netherlands, Sweden, Belgium, Denmark), most studies focusing on workers with musculoskeletal disorders who had been absent from work for at least four weeks. The RTW coordination programmes involved a direct assessment of participants' conditions and a tailored RTW plan delivered by a coordinator. The recent SRMA on RTW coordination programmes identified five more studies from nine countries (UK, USA, Canada, Belgium, Denmark, the Netherlands, Norway, Sweden, Switzerland) with a total of 12568 participants [61]. The majority of the studies focused on individuals with musculoskeletal disorders (k=11), two studies with people with mental health and one with a combination of both conditions. The coordinator was responsible for coordinating the RTW process, including the assessment of participants' conditions, needs, and limitations to RTW, b) communication with key stakeholders involved in the RTW plan, c) multicomponent interventions delivery such as physical therapy, occupational therapy, counselling, d) monitoring and follow up for providing ongoing support or RTW plan adjustments.
- Van Vilsteren et al., (2015) examined the effectiveness of workplace interventions designed for sick-listed workers [62]. The review included 14 RCTs. The studies included workers with musculoskeletal disorders and mental health problems, and

one study included workers with cancer. The duration of work disability before randomisation was between immediate sickness leave to 24 months. Participants worked in different sectors such as healthcare, office administration and agriculture. The workplace interventions included those aimed at changes to workplace environments, design and equipment, and changes to work conditions with active engagement or case management between the worker and the employer. All interventions were carried out with face-to-face contact delivered at the workplace, rehabilitation centre, hospital, psychiatry department, or at home.

Key findings

Interventions with evidence of positive findings:

- Workplace interventions focusing **on changes in the workplace or equipment, work design and organisation (including working relationships), working conditions or work environments, and occupational (case) management with the involvement between the worker and the supervisor** were found to be more effective than usual care in support individuals to return to work. The difference in the median duration of time until first RTW between workplace interventions and usual care was reported to be a range of 14 days to 198 days (k = 5, HR = 1.55, 95% CI 1.20,2.01, I^2 48%, p= 0.11)[62].

  Workplace interventions also showed a positive effect on sickness absence days when compared to the usual care group. In other words, individuals who participated in the workplace interventions had fewer absence days when compared to those in the control group (k = 7, MD = -33.33 days, 95% CI -49.54, -17.12). When considering health conditions, workplace Interventions delivered to individuals with musculoskeletal disorders were found to be effective in reducing the time until first RTW (k=4, HR = 1.44, 95% CI 1.15, 1.82, I^2 = 32%), time until lasting RTW (k= 2, HR = 1.77, 95% CI 1.37, 2.29, I^2=0%) , and cumulate sickness days (k=5, MD = -40.47 days, 95% CI -55.98, -24.96, I^2 = 6%). The intervention found no effect when delivered to individuals with mental health conditions [62].

Interventions with evidence of no effect:

- Workplace interventions focusing on **changes in the workplace or design and organisations with the involvement of key stakeholders** appeared not to have an impact in reducing time until lasting RTW compared to usual care (k =6, HR = 1.07, 95% CI 0.72, 1.57) [62]'

Interventions with evidence of mixed findings:

- Two systematic reviews focused on the effectiveness of interventions with **RTW coordinators**. These programmes involved RTW coordinators who directly assessed individuals, leading to an individually tailored RTW plan implemented. The programmes also might involve a team that coordinated services and communication among different stakeholders. In an earlier review, these types of

interventions found to be effective in facilitating people returning to work - 5 in 100 more individuals who were on sick leave or on disability benefit return to work (k =6, RR = 1.08, 95% CI 1.03, 1.13, I^2 =0%), reducing time until return to work (n = 5, HR = 1.34, 95% CI 1.14, 1.56, I^2 = 13.6%), increasing proportions of ever returned to work by 4 more per 100 (k =8, RR = 1.07, 95% CI 1.00, 1.13, I^2 =20.5%), and reducing sickness absence by 36 days per years (k= 2, MD = 36.1, 95% CI 16.5, 55.7), I^2 = 0%) [60]. However, in a more recent study by Vogel et al., 2017 identified five new low risk bias studies [61]. They found no significant differences when compared to the usual care group on:

- time to return to work: (short term follow up, k=2, HR = 1.32, 95% CI 0.93, 1.88, I^2 =0%; 12 months follow-up, k=6, HR = 1.25, 95% CI 0.95, 1.66, I^2 = 78%, more than 12 months follow up, HR =0.93, 95% CI 0.74, 1.17, I^2 = 18%),
- cumulative sickness absence (short-term follow up, k=1, MD =16.18 work days per year lower, 95% CI −32.42, 0.06; 12 months follow up, k =6, MD = 14.84 work days per year lower, 95% CI −38.56, 8.88, I^2 = 82%; more than 12 months follow up, k=1,MD = 7.00 work days per year higher, 95% CI −15.17, 29.17),
- proportion of participants who were at work at the end of the follow up periods (Short-term follow-up, k=5, RR =1.06 , 95% CI 0.86, 1.30, I^2 =65%; 12 months follow up, k=5 , RR =1.06, 95% CI 0.99, 1.15, I^2 =41%; more than 12 months follow up, k=2, RR = 0.94, 95% CI 0.82, 1.07,I^2 = 0%), or
- proportion of participants who had ever RTW (short-term follow-up, k= 4, RR = 0.87, 95% CI 0.63, 1.19, I^2 =78%; 12 months follow up, k= 8; RR = 1.03, 95% CI 0.97, 1.09, I^2 =45%; more than 12 months follow up, k= 4, RR = 0.95, 95% CI 0.88, 1.02, I^2 = 0%).

The authors suggested that the differences in the findings of the two reviews may be due to the quality of usual care delivered, which may have been improved in recent studies.

Table 4.6: Workplace-focused interventions: Key findings from SRMA

Interventions	**No. of reviews with meta-analysis findings**	**Key findings**
Workplace interventions	One review (high quality) [62]	- Time until first RTW (+) - Sickness absence (+) - Time until lasting RTW (=) *- Effective on time until first RTW, time until lasting RTW, and sickness absence when delivered to individuals with musculoskeletal disorders*

Interventions	No. of reviews with meta-analysis findings	Key findings
RTW coordinators	2 linked reviews (high quality) [61] [60]	Time to RTW, sickness absence, Employment rate, proportions of ever returned to work (=) [61] Time to RTW (+), proportions of ever returned to work (+), Sickness absence (+), No. people return to work (+) [60]

(+) statistically significant positive; (-) statistically significant negative; (=) no statistically significant difference

4.2.4 Multilevel, multi component interventions for individuals with poor physical and/or mental health conditions

One SRMR examined multilevel intervention programmes [46]. Gross and colleagues (2020) examined the impact of the interventions that targeted two or more individuals or environment dimensions on community participation outcomes including employment, adult learning, or housing) for adults with disabilities. The review identified 15 studies (nine RCTs, 6 quasi-experimental studies) with 7078 adults (18 years or older) with disabilities. The disabilities included physical health, mental health, ageing-related disabilities and/or intellectual disabilities. The interventions included the review aimed to enhance skills, knowledge, or changing behaviours or changing environment characters in which participants interact in different sociological domains, often through a cognitive coaching model. The interventions were delivered mostly in the USA (10 studies). Other settings were China, Germany, Italy, and Australia. The findings suggested **no statistically significant** positive impact of the interventions on employment outcomes (e.g. number of jobs, length of employment, wages) when compared to a comparison group (k =5, g = 0.444, 95% CI -0.061, 0.9470).

4.3. Effectiveness of interventions aiming to support individuals with poor physical health

4.3.1. A descriptive overview and key findings of systematic reviews and meta-analysis (k= 6?)

Six systematic reviews examined interventions for individuals with physical disabilities, with one employing meta-analysis [49] and five using narrative synthesis [40,45,50-52]. (See Appendix G for key characteristics of the interventions for individuals with physical health and disabilities).

Russo et al., (2021) conducted a systematic review and meta-analysis to evaluate the effectiveness of **multidisciplinary workplace interventions** on sick leave days, return to work and work capability of workers with nonspecific low back pain. These interventions included work-related evaluations and workplace modification, ergonomic training and education sessions, supervised exercise sessions, and counselling, stress management and CBT. The meta-analysis found no significant differences between intervention and control groups on sick leave (k =4, OR = 0.98, 95% CI 0.76, 1.26, I^2 = 0%), days of sick leave (k =4, OR = 0.80, 95% CI 0.62, 1.04, I^2 = 99%).

Table 4.7 Workplace focused intervention: Key findings from SRMA

Interventions	No. of reviews with meta-analysis findings	Key findings
Work place interventions	One review (high quality) [49]	- Sick leave (=) - Days of sick leave (=)

4.4. Effectiveness of interventions aiming to address economic inactivity in individuals with learning disabilities

4.4.1. A descriptive overview and key findings of systematic reviews and meta-analysis (k= 1)

Two systematic reviews examined the effectiveness of interventions targeting individuals with learning disabilities (LD), one of them performed a meta-analysis, rated as low quality [53] and the other a narrative synthesis, rated as high quality [29]

Damianidou and colleagues (2019) investigated the impact of technology use on employment-related outcomes for people with intellectual and developmental disability through an updated meta-analysis of 41 studies involving 112 participants. The study design

varied between single-subject experimental, multiple probes, multiple baselines, alternating treatments, and adapted alternating treatments design. No geographical location was specified, and the quality of included studies was not reported. The types of technology varied from auditory prompting devices, video-assisted training, palmtops, desktop and laptop computers, pictorial prompts, augmented reality devices, smartphones and watches, and were used for employment-related goals in different work settings, which could be simulated or real.

The study found **that technology interventions were generally effective**, with most showing improvements in about 87% of the cases, although there was some variation in how effective they were across different situations (347 unique treatment phases, PND score for all treatment phases was 87 (SD = 29.9)). Out of 347 treatment phases, 292 had information about the participants' levels of Intellectual and Developmental Disabilities (IDD). The Kruskal-Wallis test, which is a statistical method used to compare groups, found significant differences between the groups based on the severity of their IDD.

Participants with mild to moderate IDD (271 people) had an average PND score of 86 (SD = 30.85). This means their treatment was generally effective, showing improvement in 86% of the cases, but there was some variation in the effectiveness. Participants with severe to profound IDD (21 people) had a lower average PND score of 71 (SD = 43.7). This indicates that the treatment was less effective for this group, showing improvement in 71% of the cases, and there was more variation in the effectiveness.

Nevala and colleagues (2019) explored the effectiveness of **rehabilitation interventions** on the employment and functioning of people with ID aged 16 to 68 years old, as well as barriers and facilitators of employment. The review included 38 studies in total from which ten were quantitative (one RCT, one concurrently controlled, and eight cohort studies), six were qualitative studies, one was a multimethod study, and 21 were case studies. A total of 241,080 people from the USA, UK, Sweden, Austria, UAE, Australia, Taiwan participated in the studies.

The interventions aimed at supporting individuals with ID through various stages of their lives, particularly focusing on secondary education, the transition to work, job-seeking, and sheltered work environments. Despite the interventions' diverse nature, a common theme was the attempt to enhance vocational skills, work awareness, and overall independence of individuals with ID. However, the detailed reporting of these intervention stages was often lacking. Quantitative research indicated that **supported employment** significantly enhances the chances of individuals with learning disabilities (ID**) finding jobs in the open labour market**. This conclusion was drawn from a high-quality RCT study, a high-quality cohort study, and a moderate-quality cohort study, collectively involving 16,947 participants with ID. Similarly, **the transition from school to the open labour market** was positively

influenced by **both secondary and postsecondary education**, including associated support services and vocational training. This finding is based on two high-quality cohort studies and three moderate-quality cohort studies, encompassing a total of 207,484 participants. In contrast**, sheltered work** environments did not appear to improve open **labour market employment** for individuals with ID. This conclusion is supported by one high-quality RCT study and one high-quality cohort study, covering a combined total of 15,089 participants.

Chapter 5: A description of characteristics of interventions aiming to address labour market participation for older workers

This chapter aims to address the RQ2 – What is the nature of research evidence and key characteristics of interventions aiming to provide support and assist the transition from economic inactivity to employment and/or staying in employment for older workers?
It describes key characteristics of interventions designed for older workers. Section 5.1 outlines the key characteristics of five systematic reviews. Section 5.2 discusses the nature of twenty-one primary research and key characters of interventions designed to support older workers to stay in work or return to work.

5.1 Systematic reviews of interventions aiming to address labour market participation for older people (k=5)

There were five systematic reviews that focused on older workers. The reviewed interventions were mostly designed to encourage continuing in work, rather than a return to work after an absence, such as after sick leave or seeking work after a period of unemployment. Interventions for older workers included those that sought to prevent early retirement and to address the particular health needs of older workers that may cause older workers to withdraw from the workforce.

One systematic review was a narrative synthesis of evidence from interventions that aimed to support employment, and measured the impact on early retirement, work ability, and productivity [65]. These interventions were diverse and included yoga classes, providing free fruit, education and employment counselling and assessments for adaptations at work but found insufficient evidence to recommend one intervention over another or an effect of such programmes overall. The authors attributed this to a lack of robust, high quality intervention studies.

The Parsons 2019 rapid review considered programmes to encourage continued work for older people and for seeking work for those that wanted it. The review found three main types of intervention: addressing the motivations for people to continue working, retirement perspectives, and health issues at work [66]. There was a lack of studies on approaches to encourage and support self-employment, return to work and support for unemployed older job seekers. The review also found potentially promising approaches for mid-career reviews, by providing rapid responses to redundancy and unemployment to maintain motivation and skills and personalised approaches that address individual and complex needs. Like the Clostermans 2015 review they too found a lack of good quality study designs hindered conclusive comments on the effectives of interventions designed to prevent early exit from the labour market.

One review considered interventions designed to address health needs of older workers and the impact on sickness absence, productivity, and continued employment. They found a lack of robust evidence supporting interventions designed to address exercise interventions, pharmaceutical interventions, different types of surgery, patient education or work accommodation alone, but more promising results when the interventions were multi-component.

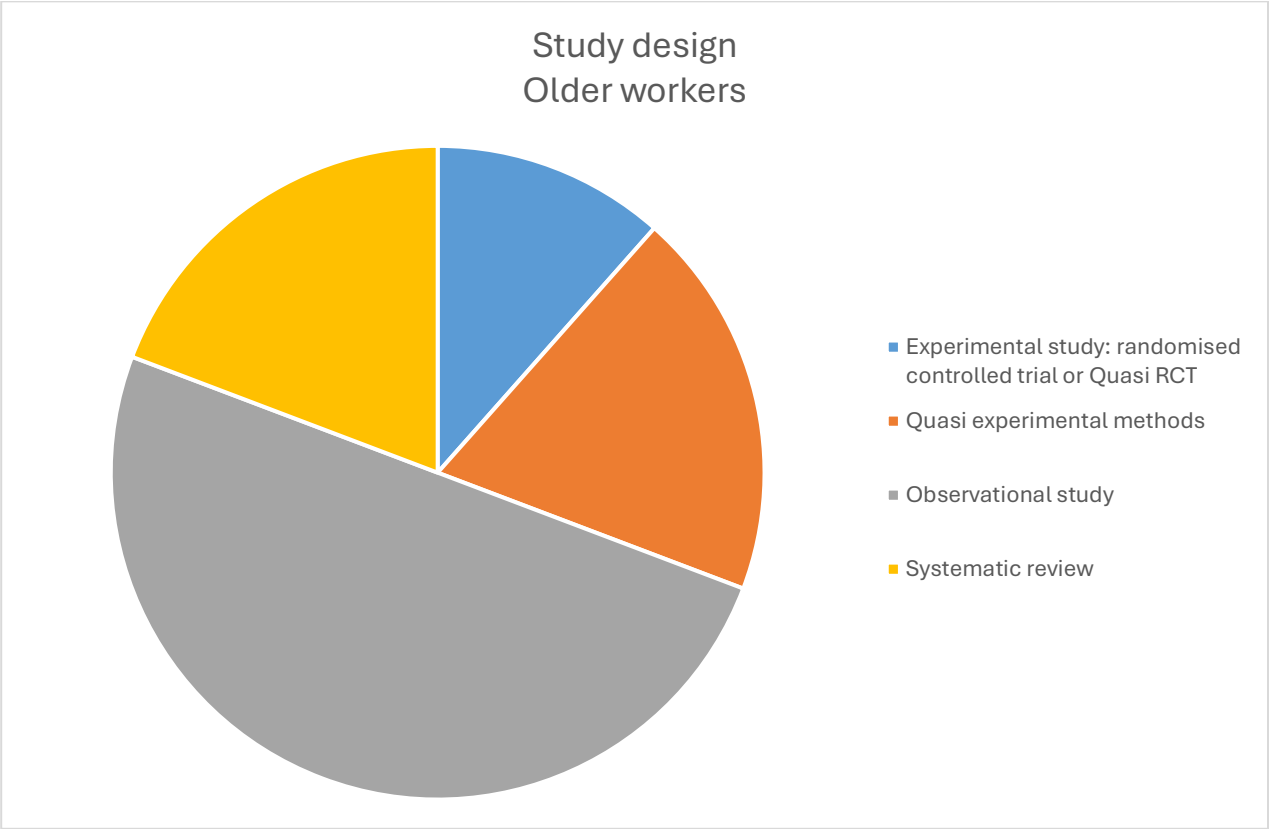
There were two reviews of health and health and safety at work for older workers [67,68]. The Poscia 2016 review included studies in English and Italian that promoted health at work and the impact on work ability, productivity or job retention of older workers. However, it found little conclusive evidence to support health promotion at work interventions, again, due to the lack studies designed in such a way as to reliably detect an effect. The Bentley review focused specifically on health and safety at work and prevention of injury at work that could lead to older workers withdrawing from the workforce. They found limited evidence but promising approaches at the organisational level and for multi-component interventions.

5.2. Systematic map of primary studies of interventions for older workers (k=21)

There were 21 primary studies of intervention targeting older workers. They were set in Belgium (3), Canada (k =2), China (k =2), Finland (k =2), Netherlands (k =2), United Kingdom (k= 2), Denmark (k =1) France (k =1), Germany (k =1), Italy (k =1), Japan (k= 1), Korea (k =1), Norway (k =1), Poland (k=1).

Most of the intervention studies were observational (k=12), followed by quasi-experimental (k=5) and a smaller number of impact studies were designed as randomised controlled trials of interventions (k=3).

Figure 5.1: Study design



The highest number of studies within a theme of intervention type was at the structural and system level (k=9) with five studies measuring impacts of employment/ labour market interventions, health-oriented interventions (k=5) with fewer studies targeting education and skills for older workers (k=2). Only one study was described as a multi component study (k=1).

There was a wide range of different outcomes measured, with the most frequently measured being employment related outcomes, within this theme there were 11 different outcomes, most frequently this was measures of the employment rate (k=6) followed by work ability (k=4) and most relevant to the older worker context, retirement exit from workforce (k=4).

Structural and system-level outcomes included measures of rate of benefit receipts, including receipt of disability benefit (k= 3), pension (k=2) and unemployment benefit (k=2). Health related outcomes included sickness absence days (k=2) and vitality (k=2), depression (k=1), function (k=1), pain (k=1) and fatigue (k=1). Other person-centred outcomes that measured changes in knowledge, attitudes, awareness and satisfaction were even fewer and included Self-belief (k=1), intentions (k=1), work attitudes (k=1), and self-efficacy (k=1).

5.2.1. Findings for interventions at the structural and system wide level (k=9)

Interventions for older workers delivered at the structural and system wide interventions were **policy and regulation interventions** designed to influence people's choices around retirement (see Table 5.1). These included negative incentives by raising the retirement age and so reducing eligibility [69-71]. These approaches were studies in Italy, Japan and Poland, and positive incentives such as providing bonuses in cash and in kind, and incentives to delay retirement in Belgium, France, and China [72-76].

Findings reported for **structural and system level interventions**, appeared to be mixed and small. Changing the eligibility of retirement benefits by raising the retirement age had only a small influence on people's decision to retire as it did not show a corresponding increase in employment, which could have meant that people who would have retired earlier withdrew from the workforce on health grounds or remained unemployed and suggested that people make their decision to retire based on more factors than eligibility alone [69,71]. Positive incentives included cash incentives to delay retirement [72-75] and in-kind incentives to remain in employment in the form of work-based health insurance [76].

The impacts of in-cash **pension bonuses** for staying on at work, higher wages for those nearing retirement to encourage delaying retirement were also mixed, showing different results for different groups of older workers, small effects seemed to benefit older workers but at the detriment to younger workers suggesting a substitution effect [72,75]. Bonuses may benefit only those already at the top of the wage distribution (Smith 2014), pension bonuses may benefit older men slightly more than older women [73,75], or had little impact on people's decision on whether and when to retire [74].

The in-kind bonus of work-based health insurance combined structural level with person centred interventions. The aim of the incentive was to increase access to healthcare through insurance that could both incentivise continued work through the offer of a benefit while in work, as well as address health conditions that could lead to withdrawal from the workforce[76]. This multisectoral intervention was set in China.

Table 5.1: Primary studies of interventions for on older workers: structural and system wide level interventions

Title	Study characteristics	Interventions characteristics	Findings
Ardito (2021) [69]	**Country** Italy **Population** Older workers (in	**Structural and system interventions** Raising retirement age	**Employment related outcomes** Employment rate

Title	Study characteristics	Interventions characteristics	Findings
	employment) Other key characteristics as stated in the paper (e.g. low income, rural, migrants) Private sector, male **Type of study design** Quasi experimental methods, administrative data, pre and post pension reform **Level of intervention** Individual level **Delivery setting** Not stated **Comparison** Pre reform	**Level of intervention** Individual level p **Key intervention strategies and approaches used** Raising the normal retirement age (NRA) from 60 years to 65 years for private-sector male employees.	**Receipt of benefits** Disability benefit Pension benefit Unemployment benefit **Findings** Mixed Findings summary the NRA raise reduces pension benefit claims but does not lead to a one-to-one increase in the employment rate since workers also apply for more disability and unemployment benefits. This paper shows that raising the NRA could have unintended effects as it affects more negatively the most vulnerable in the labour market.
Dejemeppe (2015) [72]	**Country** Belgium **Population** Older workers (in employment) **Type of study design** Observational study **Level of**	**Structural and system interventions** Intergenerational Solidarity Pact (ISP) aims to discourage access to early retirement **Level of intervention** Government level (local or national) **Key intervention**	**Employment related outcomes** Employment rate **Findings** Mixed Findings Summary The results suggest a slight positive impact of the ISP on the employment rate of older workers but to the detriment of the younger workers.

Title	Study characteristics	Interventions characteristics	Findings
	intervention Government level (local or national) **Delivery setting** Structural and systems (e.g. law, tax, social security) **Comparison** Pre reform	**strategies and approaches used** pension bonus, reductions in employers' social security contributions and measures discouraging early retirement while encouraging working time reductions at the end of the career.	
Kondo (2017) [70]	**Country** Japan **Population** Older workers (in employment) in large sized firms **Type of study design** Quasi experimental methods natural experiment – not researcher-controlled **Level of intervention** Government level (local or national) raising age for eligibility for state pension revision Elderly Employment Stabilization Law (EESL)	**Structural and system interventions** Raising retirement age **Level of intervention** Government level (local or national) raising age for eligibility for state pension revision Elderly Employment Stabilization Law (EESL) **Key intervention strategies and approaches used** End of setting mandatory retirement lower than pension eligibility age Raising age for eligibility for state pension revision.	**Employment related outcomes** Exit from labour market **Findings** Positive Findings summary We found that the EESL revision increased the employment rate of men in their early 60s among the affected cohorts. Notably, we found that the effect was limited to employees at large-sized firms, consistent with the view that the EESL was binding only for large-sized firms. These results imply that government intervention on the demand-side can be effective in increasing employment only for large-sized firms. the effect of an increase in the pension eligibility age is larger for

Title	Study characteristics	Interventions characteristics	Findings
	Delivery setting Structural and systems (e.g. law, tax, social security)	employers had to offer continuous employment until age 63	the cohorts subject to the revised EESL. This result implies that demand-side interventions, such as the EESL revision, can potentially make conventional supply-side interventions, such as raising the pension eligibility age, more effective.
Komada (2019) [71]	**Country** Poland **Population** Older adults (General population or no information about employment status) Other key characteristics as stated in the paper (e.g. low income, rural, migrants) in a transition economy that had previously encouraged early retirement **Type of study design** Observational study **Level of intervention** Government level	**Structural and system interventions** Raising retirement age **Level of intervention** Government level (local or national) **Key intervention strategies and approaches used** In the mid-2000s nearly everybody was entitled to claim benefits as early as 55/60 and in some occupations, it was even 50/55. This situation changed with a bill passed in December 2008 and effective as of January 2009. Minimum eligibility age of 60/65 was restored universally, with full eligibility requiring 25	**Employment related outcomes** Exit from labour market **Receipt of benefits** Pension benefit **Findings** Small effect Findings summary We find virtually no effects for the early pension benefit take-up rates, which suggests that even prior to the reform, the eligibility alone was not the only criterion for the decision to claim early pension benefits … results effectively imply is that a large fraction of individuals who remained active in the labour market following the introduction of the reform, would have done so also in the absence of the legislative changes.

Title	Study characteristics	Interventions characteristics	Findings
	(local or national) **Delivery setting** Structural and systems (e.g. law, tax, social security) **Comparison** Pre reform	years of work experience.	
Le Duigou (2021) [73]	**Country** France **Population** Older workers (in employment) **Type of study design** Observational study **Level of intervention** Workplace and employer level Government level (local or national) **Delivery setting** Structural and systems (e.g. law, tax, social security) **Comparison** Pre reform	**Structural and system interventions** Incentives to delay retirement **Level of intervention** Workplace and employer level Government level (local or national) **Key intervention strategies and approaches used** Pension bonus to older workers who postponed their retirement until the legal age. Higher wages to induce their workers to work longer.	**Employment related outcomes** Employment rate Wages **Findings** Mixed Findings summary Postponing workers' retirement horizon with an incentive policy affects wages in the previous age class and particularly for earners at the top of the wage distribution, but it does not influence employment. Financial incentives also do not affect workers homogeneously; disutility at work and unemployment insurance cause only highly paid workers to lengthen their career. That is, the main effect of incentive policies is a distortion of the offered wage distribution, such that the policy only benefits insiders already employed with a high wage.

Title	Study characteristics	Interventions characteristics	Findings
Lopez-Novella (2012) [74]	**Country** Belgium **Population** Older workers (in employment) **Type of study design** Observational study **Delivery setting** Structural and systems (e.g. law, tax, social security) **Comparison** Pre reform	**Structural and system interventions** Incentives to delay retirement **Key intervention strategies and approaches used** A pension bonus if retirement delayed	**Employment related outcomes** Continued employment **Findings** No effect Findings summary the "pension bonus" had, if any, a very limited impact on the probability of staying employed a year later for male workers aged 62-64 compared to those aged 60-61.
Smith (2014) [75]	**Country** Belgium **Type of study design** Observational study **Level of intervention** Government level (local or national) **Delivery setting** Structural and systems (e.g. law, tax, social security) **Comparison** Pre reform	**Structural and system interventions** Intergenerational Solidarity Pact (ISP) **Level of intervention** Government level (local or national) **Key intervention strategies and approaches used** The objective of the Intergenerational Solidarity Pact (ISP) was to increase the employment rate of elderly people. The main policies consist	**Employment related outcomes** Employment rate **Findings** Mixed Findings summary The point estimates suggest that there could be a small positive impact of the ISP on the employment rate of elderly men and, on a smaller scale, of elderly women. Consistent with this finding, the results suggest a small negative impact for younger men which could be interpreted as a substitution effect. However, the observed

Title	Study characteristics	Interventions characteristics	Findings
		in, by order of importance, a permanent wage subsidy, an easy access to working time reduction with wage compensation and a pension bonus.	values of the employment rate stay in the confidence interval around the forecasts for the period 2007q2-2008q2 which means that there is not enough statistical power to conclude to a significant impact of the ISP. For younger women, there is no evidence of an impact of the ISP.
Yuan (2022) [76]	**Country** China **Population** Older workers (in employment) Other key characteristics as stated in the paper (e.g. low income, rural, migrants) rural and urban health insurance schemes, weak coverage for informal workers **Type of study design** Observational study China Health and Retirement Longitudinal Study (CHARLS-2018) The sample of this study includes older	**Structural and system interventions** Employment-based social health insurance (UEBMI **Level of intervention** Government level (local or national) **Key intervention strategies and approaches used** Greater health insurance coverage impacts on treatment for chronic conditions and early retirement due to chronic ill health. Health insurance can lessen the burden of medical expense on older workers with chronic conditions and prompt them to seek medical	**Employment related outcomes** Exit from labour market Work capacity **Findings** Positive Findings summary employment-based social health insurance (UEBMI) in China may help maintain health-related working capacity of retirement-aged people and reduce their willingness to participate in late-life careers. Their willingness to extend working life may be driven by economic pressure of higher out-of-pocket medical expenditures. By providing a supportive set of financial and physical conditions, the health insurance scheme may play an important role in reducing the conflict

Title	Study characteristics	Interventions characteristics	Findings
	people who have reached the statutory retirement age in China (i.e.,>60 years for males and>55 years for females). **Level of intervention** Government level (local or national) **Delivery setting** Structural and systems (e.g. law, tax, social security)	treatments in time and thus reduce the incidence of deterioration	encountered by chronically ill retirement-aged workers between persistent treatment and rehabilitation and demands of work. Chronically ill older adults who are insured by the UEBMI may be physically more able to work and are more likely to enter the labour force market after the retirement age.

5.2.2. Findings from work-focused interventions (k=3)

Three work- place studies aimed at making workplace adjustments to facilitate continued employment for older workers. These approaches varied from using preventive strategies ([77], changing work tasks to be less physically demanding [78] and reducing work hours or changing work patterns [79]. Overall, the effects for this type of intervention were generally positive and in one study mixed [79]. This mixed impact was attributed to the heterogeneity of older workers as a group, namely the intervention was successful for some of the participants and less so for others. It suggested that work adaptations should consider different needs and be tailored to the individual with continuous monitoring of the suitability of work adaptations with the demands of the work and the individual.

Table 5.2 Primary studies of interventions for on older workers: work-focused interventions

Short title	Study characteristics	Intervention characteristics	findings
Midtsundstad (2016) [77]	**Country** Norway **Population** Older workers (in	**Structural and system interventions** Work adjustments	**Receipt of benefits** Disability benefit **Findings** Positive

Short title	Study characteristics	Intervention characteristics	findings
	employment) **Type of study design** Observational study **Level of intervention** Workplace and employer level **Delivery setting** Workplace **Comparison** No intervention	**Level of intervention** Workplace and employer level **Key intervention strategies and approaches used** Interventions to facilitate work among employees with health problems or reduced work capacity	Findings summary Interventions to facilitate work among employees with health problems or reduced work capacity have reduced disability rates among employees aged 50-61. This suggests that companies' preventive interventions are an effective means to retain older workers with deteriorating health.
Neupane (2023) [78]	**Country** Finland **Population** Older workers (in employment) **Type of study design** Experimental study: randomised controlled trial or Quasi RCT **Level of intervention** Workplace and employer level **Delivery setting** Workplace	**Structural and system interventions** Work adjustments **Level of intervention** Workplace and employer level **Key intervention strategies and approaches used** Addressing the associated work-related physical factors. The workers in senior program were allocated less physically demanding tasks and offered the option to participate	**Employment related outcomes** Exit from labour market Work ability **Receipt of benefits** Disability benefit **Findings** Positive Findings summary A workplace senior program intervention prolonged work life and had positive effect on reducing disability pension among older industrial workers.

Short title	Study characteristics	Intervention characteristics	findings
	Comparison No intervention	in rehabilitation and training programmes if needed.	
van der Meer (2016) [79]	**Country** Denmark **Population** Older workers (in employment) **Type of study design** Observational study **Level of intervention** Workplace and employer level **Delivery setting** Workplace **Comparison** No comparison	**Structural and system interventions** Work adjustments Working Hours and Night Work **Level of intervention** Workplace and employer level **Key intervention strategies and approaches used** Whether lower work ability and work engagement predict the use of company policies on reduced working hours.	**Employment related outcomes** Work ability Work engagement **Findings** Mixed Findings summary Low work ability precedes the use of some company policies aiming to support sustainable employability of older workers. Further research is needed to explore whether company policies result in a (longstanding) improvement, or reduced deterioration, of older workers' employability. The mixed findings with respect to the consequences of using company policies stresses the importance of tailoring measures to the individual, and continuous communication between the employee and his/her manager about the fit between the demands of the job and the individual worker.

5.2.3 Findings from person-centred interventions (k=9)

Job search and occupational change

Five studies evaluating the effectiveness of interventions were centred around changing aspects of the person – their behaviours, knowledge, skills, beliefs and attitudes. All five included older people who were unemployed at the time. Three studies evaluated the effectiveness of interventions designed to help with job searching, such as practicing interviews and resume writing, while two others focused on interventions designed to increase knowledge and skills such as IT.

One large, community wide study in Canada (Human Resources and Skills Development Canada (2010) focused on older workers in vulnerable communities, that is communities with high unemployment following decline of industries [80]. It included a wide range of activities including job clubs, resume writing, interviewing techniques, skills upgrading and direct marketing to employers and skills for self-employment. In addition to the person-centred approaches, the programme also included wage subsidies and work experience. The study measured changes in measures of self-efficacy and belief as well as take up of employment. The study found high levels of satisfaction with the programme and three quarters had found employment during or after the programme.

Analysis of a UK flagship work-to-welfare policy Work Programme (WP) approach to employment assistance [81] for people on Job Seekers' Allowance (JSA) and for people on Employment and support allowance (ESA). People could claim ESA if they were (1) of working age and worked before, and (2) had a disability or illness that affected their ability to work. People who claimed JSA were more likely to return to work within three months while this rate was constant for people claiming ESA over the two years of the programme. For both groups, health, length of time unemployed and the individual's own assessment predicted return to work. The study found that age was negatively associated with the success of return to work.

One study set in China (Wang 2023) evaluated the mediating effect of personality type on the impact of the intentions to take on 'Bridge employment' as an approach to retaining older workers [82]. Bridge employment is described as a midway point between a professional job and complete withdrawal from the labour market. The study evaluated the success and mediating factors of personality types on the intentions to take up bridge employment in older workers following a Job crafting programme which takes three different approaches. The mediating effect of different approaches and different personality types confirmed that such programmes should be tailored to individuals' motivations and goals.

Table 5.3 Primary studies of interventions for on older workers: Person centred support for employment/ labour market

Short title	Study characteristics	Intervention characteristics	Findings
Brown 2018 [81]	**Country** United Kingdom **Population** Older adults who not in employment or not seeking employment (economic inactivity) **Type of study design** Observational study **Level of intervention** Individual level **Delivery setting** Government facilities **Comparison** matched group	**Intervention Type** Employment/Labour market focus intervention **Employment/Labour market focus intervention** The Work Programme (WP) UK Government's flagship welfare-to-work initiative to help those more detached from the labour market to enter employment and reduce the time people spent on benefits	**Employment related outcomes** Job start **Receipt of benefits** Job seekers' allowance Employment and support allowance **Findings** Mixed Findings summary [There is a strong negative relationship between age and the predicted probability of having a job start during the two-year engagement with the programme for both JSA and ESA clients. JSA clients were most likely to RTW in the first three months, while for ESA clients the predicted probability of having a first job start was fairly constant over the two years. Age plays an important role in influencing RTW; however, important potentially modifiable factors include the length of unemployment, the management of multimorbidity and the

Short title	Study characteristics	Intervention characteristics	Findings
			individual's perception of the likelihood of job start.
Human Resources and Skills Development Canada (2010) [80]	**Country** Canada **Population** Older adults who not in employment or not seeking employment (economic inactivity) **Type of study design** Quasi experimental methods **Level of intervention** Individual level **Delivery setting** Community settings Targeted at vulnerable communities, e.g. with high unemployment due to industry closure **Comparison** No intervention	**Employment/Labour market focus intervention** Targeted Initiative for Older Workers (TIOW). **Level of intervention** Individual level **Key intervention strategies and approaches used** Employment assistance activities which include (but are not limited to) activities such as résumé writing, interview techniques, counselling and job-finding clubs. Assessment, peer mentoring, basic skills upgrading, skills training, wage subsidies to access available employment, preparation for self-employment, work experience on community projects, direct marketing to employers, and post-project follow-up mentoring and support	**Knowledge, attitudes, awareness, satisfaction** Beliefs in own skills and employability **Findings** Positive Findings summary Further, the labour market outcomes of participants surveyed were positive, with 75% having found employment during or after their participation in TIOW, and 80% indicating they felt more employable because of the project activities

Short title	Study characteristics	Intervention characteristics	Findings
Wang (2023) [82]	**Country** China **Population** Older adults (General population or no information about employment status) **Type of study design** Observational study **Level of intervention** Individual level **Delivery setting** Workplace **Comparison** No comparison	**Employment/Labour market focus intervention** Bridge Employment **Level of intervention** Individual level **Key intervention strategies and approaches used** Job crafting – testing the mediating role of psychological contract type in the effect of older workers' job crafting strategies on intention to bridge employment. In Study 2, based on a two-by-two (high emotional support/baseline × high/low compensation support).	**Knowledge, attitudes, awareness, satisfaction** Intentions **Findings** Positive Findings summary Accommodative crafting, developmental crafting, utilization crafting are all positively related with bridge employment intentions. the emotional support provided by the organisation satisfied the contractual terms of relationship-oriented older workers and thus retained them but did not work for transaction-oriented older workers. The compensation support provided by the organisation satisfied the transaction-oriented older workers and thus retained them, in contrast, was repelled by relationship-oriented older workers.

There were two studies that focused on education and skills acquisition[83,84]. The Choi et al., 2012 was set in Korea, and included training and updating skills for unemployed older workers who wanted job training and found a small but positive effect on employment probability. The other study set in Germany was also targeted at older people that were currently unemployed and in receipt of unemployment benefits[84]. This study evaluated the impact of a range of activities as part of the programme, including training for specific skills

gaps (e.g. language and software courses) and compared the effect of in-firm training to classroom training, and effects for men and women. The impact of the training was mixed and small overall, and with differential effects for different groups.

Table 5.4: Primary studies of interventions for on older workers: support for education and skills

Short title	Study characteristics	Intervention characteristics	Findings
Choi (2012) [83]	**Country** Korea **Population** Older adults who not in employment or not seeking employment (economic inactivity) The sample included those who lost their jobs in 2007 and lost their employment insurance eligibility for involuntary reasons, such as firm closure or relocation, bankruptcy, worsening business conditions, managerial needs and firm owner's personal reasons **Type of study design** Observational study	**Education skill training focus intervention** Job training for occupational change for displaced workers' (JTOCDW). **Level of intervention** Individual level **Key intervention strategies and approaches used** Provides subsidies for training expenses, including training fees/tuition, for those who want to receive job training upon their separation from a workplace covered by employment insurance.: Up to 12 months	**Employment related outcomes** Employment rate **Findings** Positive Findings summary Effect was driven mainly by 'lock-in effects', and a positive effect in the long run. The nearest-neighbour and regression-adjusted matching estimates suggest that training increased the employment probability by approximately 4 to 8 percentage points within a year and a half after the onset of unemployment

Short title	Study characteristics	Intervention characteristics	Findings
	Level of intervention Individual level **Delivery setting** Not stated **Comparison** matched group		
Gordo (2011) [84]	**Country** Germany **Population** Older adults who not in employment or not seeking employment (economic inactivity) in receipt of unemployment benefits **Type of study design** Observational study **Level of intervention** Individual level **Delivery setting** Workplace Classroom **Comparison** matched group	**Education skill training focus intervention** Training programme **Level of intervention** Individual level **Key intervention strategies and approaches used** Short-term training participation can help to improve specific knowledge (e.g., language and software courses). It can also raise job search effectiveness, with courses on writing applications and on job interviews	**Employment related outcomes** Employment rate **Receipt of benefits** Unemployment benefit **Findings** Mixed Classroom training: For men in East Germany and women after about three months, they are usually approximately one percentage point. Yet they are mostly insignificant at a 5% level with the exception of the effects in the first three to eight months for East German women. For West German men, they are somewhat higher, are well-determined (i.e., statistically significant at least at a 10% significance level), and reach a level of more than two percentage points 12 months after the start of training. In firm training: the treatment effects for in-firm and for East and West Germans are clearly much

Short title	Study characteristics	Intervention characteristics	Findings
			higher than the classroom training effects.

Health-related interventions

Four studies evaluated programmes to improve or maintain physical and mental health and wellbeing, with the aim of older workers staying healthy to prevent withdrawal from the workforce and early retirement [85-88]. Three of the four studies were quasi-experimental, before-and-after studies, only one study was a randomised controlled trial. Studies were set in the Netherlands, Finland and Canada. Outcomes are associated with study design, study fidelity and commitment of the participants.

Workplace exercise was studied in Chopp-Hurley 2017 randomised controlled trial, set in Canada, for older workers with knee and / or hip osteoarthritis [85]. The programme found positive outcomes depression, function and pain as well as work ability.

A multi-component intervention set in Finland, evaluated a work adjustments programme and impact on sickness absence [87]. Activities within the programme included individualised work adjustments based on one-to-one supervisor interviews about work demands and various options available to reduce hours, or change hours, or changing to less demanding tasks, without being penalised in wages. Sickness absences days were increased for both intervention and control groups over the six year period, and for the intervention group, sickness days increased for short amounts of time to one to three days, but had a decreased amount of longer spell sickness days, >21 days than the comparisons group.

There were mixed results too for a quasi-experimental, manualised exercise, health and wellbeing intervention set in the Netherlands [88] the programme Vital@work measured health outcomes of vitality and sickness absence days, and work related outcomes of productivity and work engagement. Only people with a high commitment to the yoga components of the programme showed improvements in vitality and sickness absence and little change observed for the other outcomes. On the other hand, a quasi-experimental design evaluation of a “staying healthy at work” programme conducting in the Netherlands, Koolhaas (2015) found no clear effect for a CBT approach to health problem solving and attributed this to programme-level factors, such as the length of time of the programme and knowledge and skill of the trainer[86].

Table 5.5: Primary studies of interventions for on older workers: health focused interventions

Short title	Study characteristics	Intervention characteristics	Findings
Chopp-Hurley (2017) [85]	**Country** Canada **Population** **Older workers (in employment)** Older university employees with knee and/or hip osteoarthritis. **Type of study design** Experimental study: randomised controlled trial or Quasi RCT **Level of intervention** Individual level **Delivery setting** Workplace **Comparison** No intervention	**Health focus intervention** Workplace exercise **Level of intervention** Individual level	**Employment related outcomes** Work ability **Health related outcomes** Depression Function Pain **Findings** **Positive** Findings summary Significant improvements in work ability (P<0.049) and patient-reported outcomes (pain, function, depressive symptoms) existed in the exercise group while no improvements were demonstrated in the no exercise group.
Koolhaas (2015) [86]	**Country** Netherlands **Population** Older workers (in employment) **Type of study design** Quasi-experimental methods	**Health focus intervention** 'Staying healthy at work' **Level of intervention** Individual level **Key intervention strategies and approaches used**	**Employment related outcomes** Productivity Work ability Work engagement **Health related outcomes** Vitality Fatigue **Knowledge, attitudes, awareness, satisfaction**

Short title	Study characteristics	Intervention characteristics	Findings
	Level of intervention Individual level **Delivery setting** Workplace **Comparison** No intervention	'Staying healthy at work, was developed' on the basis of the two general, partially independent components of the cognitive behavioural approach 'problem orientation' and 'problem-solving style'. The intervention's cognitive-behavioural approach could help workers point out a variety of potentially effective solutions for a particular health related problem which affected their sustainable employability... It contributes to the workers' belief that they are capable of solving work-related problems and attaining goals, and thereby strengthens their self-efficacy in remaining in work.	Work attitude Self efficacy **Findings** No effect Findings summary We assume that the intervention's lack of impact on the primary outcome measures must be explained by programme failure. At the dose delivered level, the short duration of the training of the supervisors could explain the lack of effectiveness of the intervention on the primary outcome measures. The supervisors' knowledge and basic skills in communication was low and, during the training, a lot of time was spent on these basic skills instead of on the problem-solving approach. At the workers' level (dose received), the extent to which the workers actively engaged in the third stage of the intervention was lower than expected.
Siukola (2011) [87]	**Country** Finland **Population** Older workers (in employment) **Type of study**	**Health focus intervention** Multicomponent intervention	**Health related outcomes** Sickness absence days **Findings** Mixed Findings summary findings suggest that intervention might affect the

Short title	Study characteristics	Intervention characteristics	Findings
	design Quasi-experimental methods **Level of intervention** Workplace and employer level **Delivery setting** Workplace **Comparison** No intervention	**Level of intervention** Workplace and employer level **Key intervention strategies and approaches used** The participating employees had an appraisal with their supervisor about their work demands, work ability, opportunities to alter the content of work, need for rehabilitation or education. Participating employees were offered various options on wage security (wage not reduced even if work changed to be less demanding), exemption from night work or three-shift work, reduction of work task rotation, option to exchange bonus in salary for extra time off, option for free or subsidized physical therapy following referral by the company physician	sickness absence profile of older employees. Reducing long spells at the expense of increasing short spells may not seem beneficial with respect to immediate productivity, but it may reduce the risks and costs of early retirement
Strijk 2013 [88]	**Country** Netherlands	**Health focus intervention** Vital@Work	**Employment related outcomes** Productivity

Short title	Study characteristics	Intervention characteristics	Findings
	Population Older workers (in employment) **Type of study design** Experimental study: randomised controlled trial or Quasi RCT **Level of intervention** Individual level **Delivery setting** Workplace **Comparison** No comparison	**Level of intervention** Individual level **Key intervention strategies and approaches used** Vital@Work intervention were that older workers would improve their: (i) mental factors of vitality by relaxation exercises (i.e., guided yoga sessions); (ii) physical factors of vitality by vigorous intensity physical activities (i.e., guided and unsupervised workout sessions); and (iii) fruit intake (i.e., free fruit at guided sessions) by goal setting, feedback, and problem-solving strategies.	Work engagement **Health related outcomes** Sickness absence days Vitality **Findings** Mixed Findings summary No Intervention effects were observed for vitality, work engagement, productivity, or sick leave. However, the results of the present study showed that high yoga compliers significantly increased their work-related and general vitality.

CHAPTER 6: DISCUSSION AND CONCLUSIONS

6.1 Summary of Key Findings

Eighty-six research evidence has been included in the RER to address two main research questions:

PART1: RQ 1: What is the effectiveness of interventions aiming to address economic inactivity or improve economic outcomes in individuals with poor health and disabilities?

Key characteristics of systematic reviews of interventions for individuals with poor health and disabilities (k=60)

- The significant proportion of the studies included in the reviews were conducted in Scandinavian countries, UK, USA, Canada, and Australia
- The majority of the systematic reviews focused on individuals with mental health problems (k=26) and those with poor health or in sickness absence as the result of poor health and disabilities (k=25). Only six systematic reviews explored the impact of interventions on individuals with poor physical health and three systematic reviews focusing on people with learning disabilities.
- When reported, eight systematic reviews considered individuals who were not in work and 16 considered interventions designed for workers.
- Systematic reviews covered a wide range of interventions, population characteristics, outcomes of interest, highlighting a complexity and a multidisciplinary in nature of evaluative research in the field. The number of included varied across the systematic reviews, from five studies to more than 150 studies, reflecting the breadth of the systematic reviews' scope. Most of the systematic review narratively synthesised the findings, only 20 systematic reviews pooling the quantitative findings by performing a statistical meta-analysis.

We further summarise the findings from the systematic reviews and meta-analysis in Table 6.1 (k=20)

Table 6.1: A summary of key findings from systematic reviews and meta-analysis of the effectiveness of interventions for individuals with poor health and disabilities

Effectiveness of interventions aiming to address economic inactivity for individuals with mental health (k =10, six high and four moderate quality)	
Person-centred interventions (k=6)	**Support employment and Individual Placement and Support employment programmes** were effective in supporting individuals (including young people) with mental health conditions to gain competitive employment (five SRMAs, two moderate and three high quality) and increase job duration (two SRMAs, one high and one moderate quality)
	Computer-Assisted Cognitive Remediation (CACR) training programme employing a rehabilitation approach were found to have a positive impact on competitive employment, total days of work in a year and total annual earnings (one moderate quality SRMA)
	Psychosocial support delivered by face-to-face or an e-mental health intervention with or without guidance from a care provider showed a smaller number of sickness absence days (one high-quality SRMA)
	Improved care management – involved healthcare practitioners in providing enhanced care such as psychological interventions or medication treatment do not have an impact on sickness absence days (one high-quality SRMA)
Multilevel multi component RTW interventions(k=4)	Various types of interventions to support work-related mental health conditions (such as CBT with changing workplace environment were found to be effective on time to RTW, had no impact was observed on RTW rate, and showed mixed findings on absenteeism. (Three high-quality SRMRs and one moderate-quality).
Effectiveness of interventions aiming to address economic inactivity for poor physical and/or mental health conditions (k =8; four high quality and four moderate quality)	
Person-centred interventions (k=4)	**CBT-based interventions** appear to be effective when compared to the control groups on sick leave and RTW-related outcomes (two moderate-quality SRMAs)
	Early workplace interventions designed to deliver to workers with less than 15 days of sickness absence

	show no difference in the impact on time until RTW (one moderate-quality SRMA)
	Multidisciplinary rehabilitation programmes delivered in different settings (e.g. inpatient- or outpatient clinics, days visits or overnight stay) had no impact on RTW (one moderate-quality SRMA)
Workplace focused interventions (k=3)	Workplace interventions focusing on **changes in workplace or equipment, work design and organisations, working conditions, and occupational management** appeared to be effective in reducing time until first RTW. The intervention impact on sickness absence was shown to be positive when delivered to workers with musculoskeletal disorders on sickness days but showed no effect on workers with mental health conditions as a stand-alone intervention (one high-quality review).
	Workplace interventions with **involvement with key stakeholders or RTW coordinator** appeared to have no impact on RTW-related outcomes (two high quality SRMAs).
Multilevel multicomponent RTW interventions (k=1)	Interventions that targeted two or more individuals or environment dimensions on community participation outcomes, including employment, adult learning, or housing) for adults with disabilities appeared to have no impact on employment outcomes (e.g. no. of jobs, length of employment, wages) (One high-quality SRMA).
Effectiveness of interventions aiming to address economic inactivity for individuals with physical disabilities (k =1; one high quality)	
Multidisciplinary workplace interventions (k=1)	Interventions, including work assessment and modification, ergonomic posture training programme, supervised training sessions, and supervised exercise sessions and/or CBT, were found to have no impact on sick leave and days of sick leave.
Effectiveness of interventions aiming to address economic inactivity for individuals with learning disabilities (k=1, one low quality)	

Person-Centred interventions (k=1)	**Applied cognitive technology** effectively supports employment-related outcomes were generally effective based on low quality evidence – Narrative systematic reviews indicated that **supported employment** may support individuals with learning disabilities finding jobs, transition from school to the open labour market. However, **shelter work** environments did not appear to improve labour market employment.

PART B RQ2: What is the nature of research evidence and key characteristics of interventions aiming to provide support and assist the transition from economic inactivity to employment and/or staying in employment for older workers?

Key findings on characteristics of primary studies of interventions for older workers (k= 21)

- Interventions for older workers were mainly set in European countries with a small number of studies in Japan and South Korea.
- National level interventions for retirement and state pension eligibility were evaluated in Belgium, Italy, France, Japan and Poland.
- Most of the intervention studies were observational in design, frequently this was the analysis of national datasets before after a policy change or reform (k=13), followed by quasi-experimental study designs (k=5), and a smaller number of impact studies were designed as randomised controlled trials of interventions (k=3).
- **Structural and system wide level interventions** focused on raising retirement age eligibility for pensions and extend working life, or by providing financial incentives to encourage older people to delay their retirement.
- **Workplace interventions** included those that aimed to prevent ill health through health and safety measures and work adaptations for older people with or to prevent chronic conditions that can lead to earlier exit from work through chronic illness into retirement.
- **Person-centred interventions** for older workers aimed to increase or enhance skills to find a job, in the form of CV writing, job searching skills or coaching for attitudinal and motivational support or the updating of or enhancing skills for a job in the form of education and training to address specific skills gaps.
- **Health promotion workplace interventions** focused on the workplace as a site for health promotion such as exercise, diet, relaxation, and other activities and information campaigns to promote physical health and wellbeing.

6.2 Strengths and limitations

Conducting systematic reviews of reviews is a useful approach for synthesising research evidence to inform policy decisions when addressing broad research questions in a limited timeframe [89]. In this RER, we have been able to consider a wide range of interventions targeting different population groups and reasons for economic inactivity that would not have been feasible in a systematic review of primary research alone. The identification of reviews was supported by conducting a sensitive scoping exercise to map and describe a large pool of research literature before selecting the final set of includes. The scoping exercise also supported the decision to conduct a map of primary studies aiming assessing the impact on older workers. However, despite our attempt to conduct rigorous search strategies, we may have missed relevant evidence due to publication bias and language restrictions.

Drawing on existing methods to identify and critically appraise reviews, it has been possible to distil synthetic statements from high-quality meta-analyses to give an indication of the direction of effect. However, due to high heterogeneity and other methodological issues, many reviews did not conduct meta-analyses but produced a narrative summary of findings instead and were excluded from our main analysis. This reflects the lack of a standardised definitions and conceptual frameworks of interventions for economic activity. Systematic reviews identified in this review used different inclusion criteria making it challenges in synthesising the findings from the narrative reviews. By prioritising the inferential-predictive reasoning found in meta-analysis (e.g. determining if an intervention works or not), we may have inadvertently missed important contextual and other forms of knowledge relevant to understanding the overall policy problem on economic activity [90]. Furthermore, the extent to which the primary studies were not amenable to meta-analysis also relies on the previous reviewers' interpretive and conceptual biases [91].This reliance on previous reviewers' framing of a review and the overall distance from the original primary research also poses a challenge to determining the applicability and transferability of findings to other populations and settings. Finally, we develop overall statements to summarise the effectiveness of interventions from multiple systematic reviews. These systematic reviews vary in their scope but may include similar intervention types. In this RER, we broadly conceptualise interventions based on their intervention design reported by previous reviewers and categorise these interventions to four categories: person-centred interventions, workplace focused interventions, structural interventions, and multilevel multicomponent interventions. Whilst this categorisation provides a useful synthesis framework for this RER, variations in how previous reviewers conceptualised interventions exist, potentially leading to overlap and inclusion of the same primary studies in multiple reviews.

6.3 Gaps in the evidence and implications

- Whilst most of the systematic reviews identified studies are predominantly conducted in high-income countries, trials and evaluative research of policies to address economic activities in the UK and in other regions are needed.
- We identified research evidence that considers a wide range of intervention types. However, research about the interventions aiming to support individuals with learning and physical disabilities is scarce. Nonetheless, emerging evidence suggests that supported employment may be beneficial in helping individuals with learning disabilities find jobs and transition through their education. Future research should aim to understand what factors may support and facilitate employment in these population groups, informing future intervention development and evaluation.
- Whilst the effectiveness of some interventions such as Individual Placement and Support (IPS) have been systematically analysed on individuals with severe mental health conditions, there is a lack of systematic investigations targeting other common mental health conditions such as depression, anxiety and disabilities. The prevalence of long-term illnesses and associated sick leaves has been growing, further exacerbated by the COVID-19 pandemic [92]. This underscores the urgent need for future evaluative research focused on individuals with common mental health problems and disabilities, to identify and implement effective services and support systems.
- Evidence on the effectiveness of workplace-focused interventions such as changing work environments is limited and not well-described in the systematic reviews. These may be due to the complexity of delivering interventions involving various stakeholders such as employers and supervisors. The implementation of these programmes requires careful planning and coordination. Inclusion of qualitative research can provide a further understanding of experiences and perspectives of stakeholders. Future research aiming to assess effectiveness together with process evaluations of workplace-focused programmes could provide insights into how to deliver effective programmes for promoting and retaining employment of people with poor health and disabilities.
- There is limited understanding of the interactions between different ecological dimensions that affect individuals' decisions to seek a job or stay in work. These factors may include their socioeconomic background, family responsibilities, health conditions, welfare policies and broader economic conditions. Future research is needed to investigate the complex relationships between these social, health, and economic determinants of health and how these factors can shape economic inactivity-related outcomes.
- In this review, we investigated the effectiveness of interventions designed for individuals with health conditions and disabilities. The effectiveness of interventions for older workers is described, and the findings have not been systematically

synthesised in this review. However, we can nevertheless reveal a picture of different kinds of interventions being designed and delivered and evaluated in the research literature. While approaches to address barriers and facilitators were promising when implemented at multiple social domains for other social groups we reviewed, there were very few designed for older workers that were delivered in this way. Evaluations designed in such a way to detect the effectiveness of interventions delivered at multiple domains would indeed be complex to design and implement and this may explain the lack of research in this area.

- Similarly, there was a lack of studies designed to evaluate the effectiveness of programmes for older workers. More than half of the studies were non-experimental in design, with small sample sizes, and short follow-up times. Most of the interventions in the studies were designed for older people already in work or who had only recently become unemployed. There was little research on how best to support older people returning to work after a longer absence from work.
- The characteristics of populations who are economically inactive are heterogeneous. Further research should aim to gain a more nuanced understanding and specifically focus on different population subgroups that are not investigated in this review, such as young people, and those who are socially excluded or socially disadvantaged (e.g. ex-prisoners, homeless).

Appendix A: PRISMA Checklist

Section/topic		Checklist item	Reported
Title			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	Cover
Abstract			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number	Executive summary
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known.	Ch 1
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	Ch 1
Methods			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g. web address), and, if available, provide registration information including registration number.	Ch2
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	Ch2
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	Ch2 and appendix
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Ch2 and appendix

Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	Ch 2
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	Ch 2
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	Ch2
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	Ch 2
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	Ch2
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	Ch2
Section/topic		Checklist item	Reported
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	Ch2
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	n/a
Results			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	Ch3-5
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	Ch3-5

Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	n/a
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	n/a
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	n/a
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	n/a
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	n/a
Discussion			
Summary of evidence	24	Summarise the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	Ch6
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	Ch6
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	Ch6
Funding			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	Cover

Appendix B: Exclusion criteria

Inclusion criteria	Exclusion criteria
Participants: studies reported data on populations of a) older workers (aged 50 and older) b) individuals with poor health and disabilities	We exclude studies that evaluated interventions primarily target a) young people and adults without health conditions or disabilities, b) disadvantaged or socially excluded populations such as those with low socioeconomic backgrounds, people in prison, migrants, or those with previous histories of incarcerated or substance abuse.
Intervention: We include any type of intervention that aims to address economic inactivity or unemployment and poor health/disabilities including but not limited to universal support, outreach, workplace, return to work, health interventions, financial incentives, laws and regulations	We exclude studies that did not aim to address economic inactivity or unemployment.
Study design: We include primary evaluation studies both retrospective and prospective experimental and quasi-experimental studies. We consider only quantitative research. We consider systematic reviews of quantitative studies including randomised controlled studies, non-randomised studies, experimental studies, cohort studies, longitudinal studies, cross-sectional studies, with or without comparison group.	We exclude studies that a) qualitative research b) do not employ systematic review approaches where two or more databases had been searched, eligibility criteria applied, and studies had been critically appraised. The systematic reviews of quantitative research without the control groups or qualitative research would be excluded.

Outcomes We include studies that reported at least one labour market outcomes (e.g. return to work, absence, income, employment rate).	We exclude studies which do not: Report at least one labour market outcomes. Awareness, knowledge, attitudes, motivation, health and wellbeing types of outcomes would be excluded if there is no labour participation outcomes reported.
Language: Published in English	We excluded studies: Not published in English
Date: Published on or after 2010	Published before 2010
Additional exclusion criteria for stage two	
We consider only systematic reviews of quantitative studies including randomised controlled studies, non-randomised studies, experimental studies, cohort studies, longitudinal studies, cross-sectional studies, with or without comparison group.	We excluded primary research aiming to assess the effect of interventions on older people

Appendix C: Key terms and search strategies

Table A: Key search terms used in the scoping exercise

Populations	Focus	Study
Older workers	Financial Incentive	Intervention
Older employees	Market participation	Programme
Ageing workers	Employment	Effectiveness
Ageing employees	Return to work	Impact
Older workforce	Flexible working	Systematic review
Aging workforce	Outreach	Synthesis
	Job search	Review
	Job support	Scoping review
Ill health	Upskills and reskills	Provision
Sickness	Economic (in)activity	Initiative
Disability	Job retention	Evaluation
Disabled	Job security	Randomised
	Extended working	Trial
	Workplace interventions	Experimental study
		Cohort study
		Longitudinal study

Scopus (November 2023)
(TITLE (intervention* or programme* or effectiveness* or impact* or "systematic review*" or "synthesis" or "scoping review*" or "review*" or "provision" or "initiative*" or "evaluation*" or "randomised" or "randomized" or "trial*" or "experiment* stud*" or "cohort stud*" or "longitudinal stud*")) AND (((TITLE ("ill health" or "illness" or "sickness" or "disabilit*" or "disabled" or "mental health" or "sick" or "health" or "wellbeing" or "well-being") AND PUBYEAR > 2009 AND PUBYEAR < 2024)) AND (TITLE ("employment" or "market participation" or "economic inactivity" or "economic activity" or "job retention" or "job security" or "flexible work*" OR "job support" OR "job search*" OR "financial incentive*" or "return to work" or "work support" or "flexible work*" or "extended work*" or "upskill*" or "reskill*" or “workplace”)))
(TITLE (intervention* or programme* or "effectiveness" or "impact" or "systematic review*" or "synthesis" or "scoping review*" or "review*" or "provision" or "initiative*" or "evaluation*" or "randomised" or "randomized" or "trial*" or "experiment* stud*" or "cohort stud*" or "longitudinal stud*")) AND (((TITLE-ABS-KEY("older work*" or "older employ*" or "aging work*" or "ageing work*" or "aging employ*" or "ageing employ*" or "older people" or "older population*" or "elderly" or "elder* work*" or "elder* employ*") AND PUBYEAR > 2009 AND PUBYEAR < 2024)) AND (TITLE ("employment" or "market participation" or "economic inactivity" or "economic activity" or "job retention" or "job security" or "flexible work*" OR

"job support" OR "job search*" OR "financial incentive*" or "return to work" or "work support" or "flexible work*" or "extended work*" or "upskill*" or "reskill*" or "workplace")))
Econlit, ERIC, BEI, Education Abstract, Business Source Complete (21 December 2023)

Search Terms	
S6	S1 AND S2 AND S5
S5	AB "older work*" or "older employ*" or "aging work*" or "ageing work" or "aging employ*" or "ageing employ*" or "older people" or "older population" or "elderly" or "elder* work*" or "elder* employ*"
S4	S1 AND S2 AND S3
S3	TI "ill health" or "illness" or "sickness" or "disabilit*" or "disabled" or "mental health" or "sick" or "health" or "wellbeing" or "well-being"
S2	TI intervention* or programme* or effectiveness* or impact* or "systematic review*" or "synthesis" or "scoping review*" or "review*" or "provision" or "initiative*" or "evaluation*" or "randomised" or "randomized" or "trial*" or “experiment* stud*” or “cohort stud*” or “longitudinal stud*
S1	AB ("employment" or "market participation" or "economic inactivity" or "economic activity" or "job retention" or "job security" or "flexible work*" OR "job support" OR "job search" OR "financial incentive*" or "return to work" or "work support" or "flexible work*" or "extended work*" or "upskill*" or "reskill*" or “workplace”

EMBASE, MEDLINE and Social Policy Practice (23 December 2023)

	# ▲	Searches
	1	(intervention* or programme* or "effectiveness" or "impact" or "systematic review*" or "synthesis" or "scoping review*" or "review*" or "provision" or "initiative*" or "evaluation*" or "randomised" or "randomized" or "trial*" or "experiment* stud*" or "cohort stud*" or "longitudinal stud*").m_titl.
	2	limit 1 to english language [Limit not valid in Social Policy and Practice; records were retained]
	3	limit 2 to humans [Limit not valid in Social Policy and Practice; records were retained]
	4	limit 3 to yr="2010"
	5	("employment" or "market participation" or "economic inactivity" or "economic activity" or "job retention" or "job security" or "flexible work*" or "job support" or "job search*" or "financial incentive*" or "return to work" or "work support" or "flexible work*" or "extended work*" or "upskill*" or

		"reskill*" or "workplace").mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, fx, dq, bt, nm, ox, px, rx, an, ui, sy, ux, mx, pt]
	6	("ill health" or "illness" or "sickness" or "disabilit*" or "disabled" or "mental health" or "sick" or "health" or "wellbeing" or "well-being").m_titl.
	7	("employment" or "market participation" or "economic inactivity" or "economic activity" or "job retention" or "job security" or "flexible work*" or "job support" or "job search*" or "financial incentive*" or "return to work" or "work support" or "flexible work*" or "extended work*" or "upskill*" or "reskill*" or "workplace").m_titl.
	8	("effectiveness" or "systematic review*" or "synthesis" or "scoping review*" or "review*" or "evidence map*" or "meta").m_titl.
	9	6 and 7 and 8
	10	("older work*" or "older employ*" or "aging work*" or "ageing work*" or "aging employ*" or "ageing employ*" or "older people" or "older population*" or "elderly" or "elder* work*" or "elder* employ*").m_titl.
	11	1 and 5 and 10
	12	from 9 keep 1-1007
	13	from 11 keep 1-444

Appendix D: AMASTAR 2 adapted coding tool

Question	Guidance	Answer
PICO components in research questions or inclusion criteria ***Did the research*** *questions and inclusion criteria for the review include the components of PICO?* (Participants, Intervention, Comparator, Outcomes)	For Yes: Population Intervention Comparator Outcome Optional (recommended): Timeframe for follow-up Needs a clear statement of population (even if it is any person), exposure (intervention), and outcome. Comparator is usually not relevant here.	Yes No
Protocol (CRITICAL) ***Did the report of the review*** *contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify any significant deviations from the protocol?*	For Yes: The authors state that they had a written protocol or guide that included ALL the following: - review question(s), - a search strategy, - inclusion/exclusion criteria, - a risk of bias assessment - the protocol should be registered and should also have specified, - a meta-analysis/synthesis plan, if appropriate, - a plan for investigating causes of heterogeneity, - justification for any deviations from the protocol For Partial Yes: The authors state that they had a written protocol or guide that included ALL the following: - review question(s), - a search strategy - inclusion/exclusion criteria - a risk of bias assessment	Yes Partial Yes No
Study design explanation ***Did the review authors explain their selection of the study designs for inclusion in the review?*** *e.g. explanation for including only RCTs, explanation for including only NRSI, or explanation including all types of study designs Any vague attempt at explanation is valid. Only RCTs as the*	For Yes, the review should satisfy ONE of the following: - Explanation for including only RCTs OR - Explanation for including only NRSI OR - explanation for including both RCTs and NRSI	Yes No

inclusion criteria- don't have to give specific justification in the review		
Comprehensive search strategy (CRITICAL) *Did the review authors use a comprehensive literature search strategy?*	For Yes all the following: - searched at least 2 databases (relevant to research question), - provided key word and/or search strategy, - justified publication restrictions (e.g. language), -searched the reference lists / bibliographies of included studies, - searched trial/study registries (when applicable) -included/consulted content experts in the field, -where relevant, searched for grey literature, - conducted search within 24 months of completion of the review. For Partial Yes For Partial Yes (all the following): - searched at least 2 databases (relevant to the research question), -provided keyword and/or search strategy, -reported publication restrictions (e.g. language) We changed this to "reported publication restrictions" not "justified"	Yes Partial No
Duplicate study selection *Did the review authors perform study selection in duplicate?*	*For Yes, either ONE of the following:* *- at least two reviewers independently agreed on the selection of eligible studies and achieved consensus on which studies to include OR - Two reviewers selected a sample of eligible studies and achieved good agreement (at least 80 percent), with the remainder selected by one reviewer.*	Yes No
Duplicate data extraction (CRITICAL) *Did the review authors perform data extraction in duplicate?*	*For Yes, either ONE of the following:* *- at least two reviewers achieved consensus on which data to extract from included studies OR* *- two reviewers extracted data from a sample of eligible studies and achieved good agreement (at least 80 percent), with the remainder extracted by one reviewer.*	Yes No
Details of excluded studies *Did the review authors provide a list of excluded studies and justify the exclusions?* *Partial yes- means no. of*	*For Yes:* *- Provided a list of all potentially relevant studies that were read in full-text form but excluded from the review, and - Justified the exclusion from the review of each potentially relevant study (showed exclusion criteria in the PRISMA flowchart)*	Yes Partial Yes No

studies and reasons were reported in the review	*For Partial Yes:* *- Provided a list of all potentially relevant studies that were read in full-text form but excluded from the review*	
Description of included studies (CRITICAL DOMAIN) *Did the review authors describe the included studies in adequate detail?*	*For Yes (all of the following):* *- described research designs,* *- described population in detail, -described intervention in detail (including doses where relevant),* *- described comparator in detail (including doses where relevant),* *- described outcomes -described study's setting,* *- timeframe for follow-up* *For Partial Yes (all the following):* *- described populations,* *- described interventions,* *- described comparators,* *- described outcomes,* *- described research designs*	Yes Partial Yes No
A) Risk of Bias (RoB) assessment (RCTs) (CRITICAL) *Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies (RCTs) that were included in the review?*	For RCTs Yes, must have assessed RoB from: - unconcealed allocation, - lack of blinding of patients and assessors when assessing outcomes (unnecessary for objective outcomes such as all cause mortality), - allocation sequence that was not truly random, - selection of the reported result from among multiple - measurements or analyses of a specified outcome For Partial Yes, must have assessed RoB from: - unconcealed allocation, -lack of blinding of patients and assessors when assessing outcomes (unnecessary for objective outcomes such as all cause mortality) Includes only NRSIs This (NRSI) includes all other study designs - including surveys, qualitative studies, and case reports.	RCT Yes Partial Yes No Only NRSIs
9. B) RoB assessment (NRSIs) (CRITICAL) *Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies*	For NRSIs Yes, must have assessed RoB from: - confounding, - selection bias, - methods used to ascertain exposures and outcomes, - selection of the reported result from among multiple measurements or analyses of a specified outcome For NRSIs Partial Yes, must have assessed RoB from: - confounding, -selection bias	Yes Partial Yes No

(NSRIs) that were included in the review?		
Funding sources *Did the review authors report on the sources of funding for the studies included in the review?*	For Yes: must have reported on the sources of funding for individual studies included in the review. Note: Reporting that the reviewers looked for this information, but it was not reported by study authors also qualifies	Yes No
A) RCTs Meta-analysis *If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results (RCTs)?*	For Yes: The authors justified combining the data in a meta-analysis, AND they used an appropriate weighted technique to combine study results and adjusted for heterogeneity if present, AND investigated the causes of any heterogeneity bIE - Not relevant - no RCTs included, or no meta-analysis conducted	RCTs Yes No No Meta-analysis conducted Not relevant
11. B) NRSIs Meta-analysis (MA) *If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results (NRSIs)?*	For Yes: The authors justified combining the data in a meta-analysis, AND they used an appropriate weighted technique to combine study results, adjusting for heterogeneity if present, AND they statistically combined effect estimates from NRSI that were adjusted for confounding, rather than combining raw data, or justified combining raw data when adjusted effect estimates were not available, AND they reported separate summary estimates for RCTs and NRSI separately when both were included in the review.	NRSIs Yes No No meta-analysis conducted
MA: RoB in individual studies *If meta-analysis was performed, did the review authors assess the potential impact of RoB in individual studies on the results of the meta-analysis or other evidence synthesis?*	For Yes: included only low risk of bias RCTs OR if the pooled estimate was based on RCTs and/or NRSI at variable RoB, the authors performed analyses to investigate possible impact of RoB on summary estimates of effect.	Yes No No meta-analysis
RoB: discussion of results *Did the review authors account for RoB in individual studies when*	For Yes: Included only low risk of bias RCTs OR, if RCTs with moderate or high RoB, or NRSI were included, the	Yes No

interpreting/discussing the results of the review?	review provided a discussion of the likely impact of RoB on the results.	
Heterogeneity *Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review, ie did they discuss any conflicting results?*	*For Yes:* *There was no significant heterogeneity in the results, OR if heterogeneity was present, the authors performed an investigation of sources of any heterogeneity in the results and discussed the impact of this on the results of the review*	Yes Partial Yes No
Publication bias *If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review?*	For Yes: performed graphical or statistical tests for publication bias and discussed the likelihood and magnitude of impact of publication bias	Yes No No meta-analysis
Reports conflicts of interest *Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?*	For Yes: The authors reported no competing interests OR The authors described their funding sources and how they managed potential conflicts of interest	Yes No
Overall rating	Critical domain: - protocol (2) - Literature search (4) - Double data extraction (6) - Quality assessment (9)	High Answered yes or partial yes in all critical domains Moderate Answered Yes or partial yes on more than two of the critical domains Low

		Answered Yes or partial yes on one of the critical domains Critically low Failed to answer yes or partial yes on one of the critical domains

Appendix E: Key characteristics of narrative systematic reviews assessing the effectiveness interventions for individuals with multiple health problems

Short Title	Study Characteristics	Intervention characteristics	Key findings
Clayton (2011)	**Country** • UK **Aims** *A systematic review reporting employment effects and/or process evaluations of national UK government interventions focused on helping long-term sick or disabled people into the open labour market.* **Type of review** • *Narrative synthesis including mixed methods reviews.* **Population** • Long-term sick or disabled people aged 16-64. **Study designs of included studies** • Non RCTs and qualitative research **Number of studies included**	**Interventions** • **Structural interventions** *Government policies/programmes* • **Multicomponent/ multifaceted intervention** *Education and health* **Number of participants** • *Not stated* **Comparison groups** • Not stated	*Implementation problems (qualitative findings)* *- limited capacity of advisors/case workers (e.g. barriers to build trust under limited time)* *- low quality of service (reported by the advisors and benefit takers)* *- limited and/or unequal access (e.g selection issues)* *- lack of awareness (e.g. low take up)* *The use of personal advisors and individual case management in these schemes helped some participants back to work. Qualitative studies, however, revealed that time pressures and job outcome targets influenced advisors to select 'easier-to-place' claimants into programmes and also inhibited the development of mutual trust, which was needed for individual case management to work effectively. Financial*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	• *31 studies which evaluated initiatives with an individual focus (improving an individual's employability or providing financial support in returning to work)* **Overall rating** • Moderate		*incentives can help with lasting transitions into work, but the* *incentives were often set too low or were too short-term to have an effect. Many of the studies suffered from* *selection bias into these programmes of more work-ready claimants. Even though these were national* *programmes, they had very low awareness and take-up rates, making it unlikely that a population-level impact* *would be achieved even if effective for participants.*
Cullen (2018)	**Country** • UK, USA, Canada, Sweden, Netherlands, Denmark, Finland, Germany, Australia, Hong Kong, Israel. **Aims** • *To synthesize evidence on the effectiveness of workplace-based return-to-work (RTW) interventions and work disability management (DM)*	**Interventions** • **Person-directed interventions** Occupational Therapy or Vocational Rehabilitation Person-centred RTW - CBT • **Workplace focused interventions**	*There was strong evidence that duration away from work from both MSK or pain-related conditions and MH conditions were significantly reduced by multi-domain interventions encompassing at least two of the three domains. There was moderate evidence that these multi-domain interventions had a positive impact on cost outcomes. There was strong evidence that cognitive behavioural therapy interventions that do not also include workplace modifications or*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	interventions that assist workers with musculoskeletal (MSK) and pain-related conditions and mental health (MH) conditions with RTW. **Type of review** • Narrative synthesis including mixed methods reviews **Population** • Workers with musculoskeletal (MSK) and pain-related conditions and mental health (MH) conditions **Study designs of included studies** • *RCTs with other non RCTs* **Number of studies included** • *36 studies* **Overall rating** • Moderate	Work adaptations/modification (physical environments) Stakeholder engagement **• Multicomponent/ multifaceted intervention** **Number of participants** • Not stated **Comparison groups** • Other interventions	*service coordination components are not effective in helping workers with MH conditions in RTW. Evidence for the effectiveness of other single-domain interventions was mixed, with some studies reporting positive effects and others reporting no effects on lost time and work functioning. Conclusions: While there is substantial research literature focused on RTW, there are only a small number of quality workplace-based RTW intervention studies that involve workers with MSK or pain-related conditions and MH conditions.*
De Dios (2023)	**Countries** • UK, USA, Canada, Sweden, Denmark, Switzerland, France, Belgium, Australia. **Aims**	**Interventions** • **Person-directed interventions** Occupational therapy	*Individually tailored occupational therapy focused on return to work in musculoskeletal conditions indicated the most promising outcomes. Key intervention components included vocational assessment, goal setting*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	• To identify and explain how occupational therapy interventions work. **Type of review** • Narrative synthesis including mixed methods reviews **Population** • People with long-term conditions or recovering from serious injuries **Study designs of included studies** • RCTs with other non RCTs **Number of studies included** • *20 studies* **Overall rating** • Moderate	**Number of participants** • 3866 participants **Comparison groups** • Usual care • Waiting list • Other interventions	*and self-management. Key mechanisms of action included early intervention, individualised support and being responsive to needs.*
Dibben (2012)	**Countries** UK **Aims** *To provide clear, quantitative data sufficiently robust to determine the benefits of early intervention on health and work. The*	**Interventions** • **Person-directed interventions** Occupational therapy Treatment and medication Person-centred RTW	*Findings suggest that the evidence base on work-related interventions for people with common health conditions has not changed substantially since 2007, and that studies generally lacked robust quantification of employment outcomes and cost/benefit analysis of interventions. Key areas where there*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	report also aims to provide a rich resource for further analysis and the basis for stimulating further developments in research and policy. **Type of review** • Narrative synthesis **Population** • Participants with general health conditions, musculoskeletal health conditions, cardio-respiratory conditions, and mental health conditions. **Study designs of included studies** • RCTs with other non RCTs **Number of studies included** • *154 studies* **Overall rating** • Low	• **Workplace focused interventions** Work adaptations/modification (physical environments) • **Number of participants** Not stated • **Comparison groups** Not stated	*is a reasonably strong body of evidence, with positive effects, include: workplace-based interventions for those with musculoskeletal disorders, particularly for low back pain; cognitive behavioural therapy (CBT), vocational rehabilitation and workplace rehabilitation for lower back pain; supported employment for people with severe mental health conditions; and psychological interventions for depression.*
Dibben (2018)	**Countries** • European countries **Aims** • *To evaluate existing evidence on whether*	**Interventions** • **Person-directed interventions**	*Evidence on interventions for musculoskeletal conditions such as lower back pain indicates that certain forms of intervention such as vocational rehabilitation and workplace-based*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	return to work interventions achieve employment outcomes and are cost effective in order to better inform those needing accommodations at work, as well as their line managers and trade union representatives, occupational health specialists and HR managers. **Type of review** • Narrative synthesis **Population** • People with musculoskeletal health conditions, cardio-respiratory conditions, and mental health conditions. **Study designs of included studies** • Not stated **Number of studies included** • 154 studies **Overall rating** • Critically low	Occupational therapy Treatment and medication Person-centred RTW • **Workplace focused interventions** Work adaptations/modification (physical environments) **Number of participants** • Not stated **Comparison groups** • Not stated	*rehabilitation facilitate outcomes such as employment, reduced sick leave and effective return to work. However, there is very little evidence on whether these interventions are cost effective. More generally there are glaring gaps in evidence on cardio-respiratory (heart and breathing) and mental health conditions regarding both employment outcomes and the cost of interventions.*
Dol (2021)	**Countries** • USA, Netherlands, Denmark, Norway, Switzerland, Hong Kong, Singapore.	**Interventions** • **Workplace focused interventions**	*Strong evidence that work absence duration was reduced when workers had face-to-face contact with a RTWC. As well, there was strong evidence*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Aims • *To understand the impact that return-to-work coordinators (RTWCs) have on return to work (RTW) outcomes for sick/injured workers.* **Type of review** • Narrative synthesis **Population** • Workers with psychological injuries, musculoskeletal conditions, chronic pain and chronic fatigue, soft tissue injury, workers undergoing lumbar spinal fusion, and work-related injuries or fractures. **Study designs of included studies** • RCTs with other non RCTs **Number of studies included** • 14 studies **Overall rating** • Moderate	Return to work coordinator (RTWC) **Number of participants** • Not stated **Comparison groups** • Other interventions • Usual care	*linking face-to-face RTWC interventions with higher RTW rates and moderate evidence that this reduced intervention costs. RTWC interventions involving the identification of barriers and facilitators to RTW also showed promising results. However, only limited evidence was found that RTWCs improved quality of life for workers.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
Gensby (2014)	**Countries** • Not stated **Aims** *To explore the nature and effectiveness of workplace disability management programs (WPDM) promoting return to work (RTW), as implemented and practiced by employers.* **Type of review** • Narrative synthesis **Population** • Employees from the public or private sector with an inability to work due to an acquired physical injury (e.g. back pain, limb problems, neck and shoulder injuries, rheumatoid arthritis, osteoarthritis or whiplash), mental health disorder (e.g. stress disorder, depression, anxiety, somatic illness or fatigue) or other illness (e.g. cancer, neurological illness, stroke, diabetes, eye strain or carpal tunnel syndrome) resulting in functional work limitations and sickness absence. **Study designs of included studies**	**Interventions** • **Workplace focused interventions** Workplace disability management programs **Number of participants** • Not stated **Comparison groups** • No treatment • Treatment as usual • Alternative interventions.	*There is insufficient evidence to draw conclusions on the effectiveness of employer provided WPDM programs promoting RTW. It was not possible to determine if specific program components or specific sets of components are driving effectiveness. The proposed taxonomy may guide future WPDM program evaluation and clarify the setup of programs offered to identify gaps in existing company strategies.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	• Non RCT studies **Number of studies included** • *12 studies* **Overall rating** • High		
Lefever (2018)	**Countries** • Canada, USA, The Netherlands, Denmark, Sweden. **Aims** • *To systematically review the efficacy and efficiency, and the successful components of the disability management (DM) programs, which are intended for people with a competitive employment who have an occupational disability*. **Type of review** • Narrative synthesis **Population** • People with a competitive employment who have an occupational disability. **Study designs of included studies**	**Interventions** **Person-directed interventions** • Occupational - *disability management* **Number of participants** • Not stated **Comparison groups** • No intervention • No comparison	*The DM program has shown to be effective and efficient. A consensus about the DM components is still not reached. Nevertheless, some components are emphasized more than others; job accommodation, facilitation of transitional duty, communication between all stakeholders, health care provider advice, early intervention, and acceptance, goodwill and trust in the stakeholders, in the organization, and in the disability management process.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	• RCTs with other non RCTs, qualitative studies, systematic reviews. **Number of studies included** • *28 studies* **Overall rating** • Moderate		
McLennan (2021)	**Countries** • UK, USA, Sweden, The Netherlands, Germany, Switzerland, Italy, Bulgaria, Australia, **Aims** • *To compile the evidence for early vocational rehabilitation interventions for people with major injury or illness.* **Type of review** • Narrative synthesis **Population** • Workers with brain injuries, severe psychological illness and spinal cord injuries. **Study designs of included studies**	**Interventions** • **Person-directed interventions** Occupational Therapy or Vocational Rehabilitation. Multiprogramme (overall) **Number of participants** • *3003 participants* **Comparison groups** • Not stated	*Findings suggest that intervening early with respect to an individual's vocational goals is imperative, although the definition of "early" varies. Programs achieve better vocational outcomes when specifically employing comprehensive vocational interventions, including vocational assessment, individualized planning, and follow-up support, to ensure a person's return to employment is timely and sustained. Integration of vocational rehabilitation professionals within a multidisciplinary team and access to advocacy services were shown to be effective inclusions in early vocational rehabilitation programs for people with a serious injury or illness.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	• RCTs with other non RCTs and qualitative research. **Number of studies included** • *25 studies* **Overall rating** • Low		
Pinto (2018)	**Countries** • High-income countries **Aims** • *To identify interventions implemented within health care settings that assisted patients with gaining employment, and to ascertain common characteristics of successful interventions, to inform new ways to address employment as a social determinant of health.* **Type of review** • Narrative synthesis **Population** • *Unemployed patients.* **Study designs of included studies** • RCTs with other non RCTs	**Interventions** • **Person-directed interventions** Occupational Therapy or Vocational Rehabilitation. Supported Training and education. The Clubhouse model. Individual Placement and Support (IPS). **Number of participants** • Not stated **Comparison groups** • Traditional care or not stated	*The majority of articles (74%) tested interventions that succeeded in helping participants gain employment. Authors identified 5 key features of successful interventions: (1) a multidisciplinary team that communicates regularly and collaborates, (2) a comprehensive package of services, (3) one-on-one and tailored components, (4) a holistic view of health and social needs, and (5) prospective engagement with employers.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Number of studies included • 88 studies **Overall rating** • High		
Schutz (2022)	**Countries** • USA **Aims** • *To examine the methodological quality and efficacy of employment intervention studies that used a comparison group to evaluate outcomes for transition-age youth with disabilities.* **Type of review** • Narrative synthesis **Population** • *Participants aged 14 to 22 with a disability* **Study designs of included studies** • RCTs with other non RCTs **Number of studies included** • 25 studies	**Interventions** • **Multicomponent/ multifaceted intervention** **Comparison groups** • Usual care	*Interventions addressing employment for transition-age youth encompass a spectrum of approaches. The reviewed interventions were generally effective for improving employment status and, in some studies, employment characteristics for youth with disabilities. Although some areas of methodological quality were consistently strong, increased attention is warranted with respect to treatment fidelity and some aspects of internal validity.* .

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Overall rating • Moderate		
Williams-Whitt (2015)	**Countries** • Not stated **Aims** • *This systematic review reports on job demand and control interventions that impact absenteeism, productivity and financial outcomes* **Type of review** • Umbrella review **Population** • *Individuals with physical health conditions, physical disabilities and mental health conditions.* **Study designs of included studies** • Systematic reviews **Number of studies included** • 11 reviews	**Interventions** • **Workplace focused interventions** - Work adaptations/modification (physical environments) - Changes in working conditions (such as financial and contractual arrangement) **Number of participants** • Not stated **Comparison groups** • Not stated	*Evidence indicates that multimodal job demand reductions for either at-work or off-work workers will reduce disability-related absenteeism. In general, the impacts of interventions that aim to reduce job demands or increase job control can be positive for the organization in terms of reducing absenteeism, increasing productivity and cost-effectiveness. However, more high quality research is needed to further assess the relationships and quantify effect sizes for the interventions and outcomes reviewed in this study.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Overall rating • Moderate		

Appendix F: Key characteristics of narrative systematic reviews assessing the effectiveness interventions for individuals with mental health

Short Title	Study Characteristics	Intervention characteristics	Key findings
Abidin (2021)	**Country** • Not stated **Aims** *to examine the effectiveness of intervention programmes and determine the best intervention for schizophrenia and other severe mental illness, considering both vocational and non-vocational outcome* **Type of review** • *Narrative synthesis* **Population** • Participants with mental health conditions *Including those with schizophrenia,*	**Interventions** **Person-directed interventions** • Occupational Therapy or Vocational Rehabilitation *Vocational occupational therapy interventions or interventions related to or within the scope of occupational therapy including employment/vocational programmes, conventional vocational rehabilitation, supported employment (SE; also referred to as individual placement and support; IPS), integrated supported employment (ISE)* **Number of participants**	*Integrated supported employment was found to be the most effective approach for a vocational outcome. However, evidence concerning non-vocational outcomes of employment programmes and the use of cognitive training remains unclear.* *ISE alone (without combining with other approaches) was shown to have the best clinical evidence in this review for both vocational and non-vocational out- comes. ISE remains the strongest evidence in practice that is responsible for revolutionising vocational rehabilitation throughout*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Study designs of included studies • RCT only **Number of studies included** • *24 studies* **Overall rating** • Moderate	*3165* **Comparison groups** • Other interventions *Integrated Supported Employment compared to conventional vocational rehabilitations*	
Arbesman (2011)	**Country** The Netherlands Norway **Aims** *To systematically investigate research literature evaluating the effectiveness of interventions within occupational therapy's scope* **Type of review** • Narrative synthesis **Psychological and mental health issues** Participants with mental health conditions *Individuals with serious mental health issues' (e.g. Schizophrenia, Bipolar Disorder, severe depression)*	**Interventions** **Person-directed interventions** Occupational Therapy or Vocational rehabilitation: • *Supported Training and education* • *IPS* **Number of participants** • Not stated **Comparison groups** • Not stated	*IPS is effective in helping individuals with severe mental illness gain competitive employment. This model is more effective when combined with cognitive or social skills training. Supported education programmes that focus on goal setting, skill development, and cognitive training increase participation in educational activities.* *The study also found that evidence on daily living interventions that targeted specific homemaking occupations and supported parenting was limited but positive* *Environmental cognitive supports, such as signs and other compensatory strategies, are helpful in managing maladaptive behaviours.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	In paid or unpaid employment or education and were participating in some form of supported employment/education programme or training **Study designs of included studies** • *RCTs with other non RCTs* **Number of studies included** • *46 studies* **Overall rating** • Low		
Dewa (2015)	**Countries** The Netherlands Norway **Aims** R*eviews the current state of the published peer-reviewed literature related to return-to-work (RTW) interventions that incorporate work-related problem-solving skills for workers with sickness absences related to mental disorders. It addresses the question: What is the evidence for the effectiveness of these RTW interventions?*	**Interventions** **a) Person-directed interventions** • Person-centred RTW *RTW interventions were defined as any programme with pre- scribed activities with the objective of having employees return to their pre-absence workplaces.* • Multiprogramme (overall) *Problem-solving intervention+graded activity"*	*Two of three studies reported significant differences in RTW rates between the intervention and control groups. One of six studies observed a significant difference in sickness absence duration between intervention and control groups. There is limited evidence that combinations of interventions that include work-related problem-solving skills are effective in RTW outcomes*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Type of review • Narrative synthesis **Psychological and mental health issues** • Participants with mental health conditions [e007122.full.pdf] Page 2: *workers with medically certified sickness absences related to mental disorders*. **Study designs of included studies** • RCT only **Number of studies included** • *Eight studies* **Overall rating** • Moderate	*"Aimed at activating and supporting patient to restore coping and to adopt a problem-solving approach and return to work as soon as possible*: *"Solution focused follow-up"* *"Collaborative care"* **Number of participants** • Not stated **Comparison groups** • Usual care	
Dewa (2021)	**Countries** Canada The Netherlands Sweden **Aims** *To examine the state of knowledge about the cost-effectiveness of return-to-work (RTW) interventions targeted at workers with*	**Interventions** **a) Person-directed interventions** • Person-centred RTW *The types of interventions studied could be divided into three types. The first type emphasized teaching workers coping skills (e.g., problem solving) for their RTW. The second*	*There is evidence that RTW interventions for workers with medically certified sickness absences can be cost-effective*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	medically certified sickness absences related to mental disorders. **Type of review** • Narrative synthesis *Quantitative studies that have a comparison group: RCTs. The evaluation included a comparison group.* **Psychological and mental health issues** • Participants with mental health conditions *Three of the studies recruited workers whose sickness absences were for distress. Two of the studies focused on workers with sick leaves related to depression. Four of the studies included workers sick listed for common mental disorders including anxiety, depression, severe distress, and adjustment disorder.* **Study designs of included studies** • RCTs with other non RCTs **Number of studies included** • *10 studies*	*type of intervention involved working with the worker and supervisor to identify barriers to RTW and developing a RTW plan.* • Multiprogramme (overall) **Number of participants** • Not stated **Comparison groups** • Usual care	

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Overall rating • Critically low		
Gaillard (2020)	**Countries** USA Sweden The Netherlands **Aims** *To analyse the cost-benefit, cost-effectiveness and cost-utility results of interventions intended to improve employees' mental health, prevent common mental disorders (CMD) or promote return-to-work (RTW) after an absence due to CMD, thus encompassing primary, secondary and tertiary prevention*. **Type of review** • Narrative synthesis • Economic synthesis/Modelling **Psychological and mental health issues** • Participants with mental health conditions *reducing psychological distress and CMD (depression, anxiety syndrome, adjustment disorder) in a working-age population (secondary prevention); we also included interventions aimed at improving RTW and*	**Interventions** • Multicomponent/ multifaceted intervention **Number of participants** • Not stated **Comparison groups** • Not stated	*Strong evidence of positive economic results for RTW interventions (tertiary prevention) from the employer's as well as from the societal perspectives.* *This review reveals a high level of evidence for the positive economic results of interventions aimed at improving the RTW of workers on sick leave due to CMD from both the employer's and the societal perspectives.* *Based on our results, there is a mixed level of evidence from the employer's perspective that RTW interventions with organizational-level components are cost-beneficial.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	rehabilitation of workers on sick leave due to CMD **Study designs of included studies** • RCTs with other non RCTs **Number of studies included** • *11 studies* **Overall rating** • High		
Heffernan (2011)	**Countries** UK **Aims** *To examine the evidence for the effectiveness of the IPS model of supported employment within the United Kingdom*. **Type of review** • Narrative synthesis **Population** • Participants with mental health conditions [Supported employment for persons with mental illness Systematic review of the effectiveness of individual placement and support in the UK.pdf] Page 5: *patients*	**Interventions** **a) Person-directed interventions** • Occupational Therapy or Vocational Rehabilitation **Number of participants** • Not stated [Supported employment for persons with mental illness Systematic review of the effectiveness of individual placement and support in the UK.pdf] Page 10: *The evidence base for the effectiveness of IPS within a UK context is small. There is promising evidence, including from a high*	*The evidence base was small. Overall quality of evidence was fair. There is evidence that interventions with high fidelity to the IPS model increase the proportion of patients engaged in work or education/training over the short- to medium-term (6–18 months follow-up).*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	recruited from community mental health teams, including an early intervention in psychosis service. Psychotic illness was the largest diagnostic group in the four studies that reported diagnostic categories **Psychological and mental health issues** • Participants with mental health conditions [Supported employment for persons with mental illness Systematic review of the effectiveness of individual placement and support in the UK.pdf] Page 5: *patients recruited from community mental health teams, including an early intervention in psychosis service. Psychotic illness was the largest diagnostic group in the four studies that reported diagnostic categories* **Study designs of included studies** • RCTs with other non RCTs **Number of studies included** • Details [info] *Five studies* **Overall rating** • Low	*quality RCT, that IPS is more effective than conventional training and place vocational rehabilitation in placing people into competitive employment." "However, the quality of the evidence was generally weak. Several studies lacked adequate controls, meaning potential confounding factors were not controlled for.* **Comparison groups** • Not stated	

Short Title	Study Characteristics	Intervention characteristics	Key findings
Jetha (2023)	**Countries** Not stated **Aims** *To examine the impact of employment and income support interventions on the health and well-being of young adults living with episodic disabilities* **Type of review** • Narrative synthesis **Psychological and mental health issues** • Participants with mental health conditions **Physical health conditions** • Long term health conditions **Study designs of included studies** • RCTs with other non RCTs **Number of studies included** • *5 studies* **Overall rating** • Moderate	**Interventions** **a) Person-directed interventions** • Occupational Therapy or Vocational Rehabilitation **Number of participants** • Not stated **Comparison groups** • Not stated	*Findings highlighted improved occupational engagement, participation in employment, and hours worked* *We found an absence of high-quality evidence-based employment or income support interventions for young adults living with episodic disability that focuses on health-related impacts. Only five studies were identified which met our eligibility criteria, despite a large body of research highlighting the importance of employment as a critical social determinant of health in young adults with and without disabilities*
Johanson (2023)	**Countries** Not stated	**Interventions**	*Supported Employment (SE), individual Placement and support (IPS) was cost-effective in several contexts while three studies showed*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Aims • *To identify and summarise evidence of cost-effectiveness of RTW interventions for persons with mental health disorders which OTs provide* **Type of review** • Narrative synthesis • Economic synthesis/Modelling **Psychological and mental health issues** • Participants with mental health conditions *People with mental health disorders who were on sick leave, fully or partially employed or unemployed, and 18–67 years of age."* *"mental health disorders, such as depression, anxiety and panic disorder, post-traumatic stress disorder and exhaustion disorder (or Common Mental Disorders; CMD), bipolar disorder, schizophrenia or other psychosis, and people referred to as having a psychiatric disability or severe mental illness.* **Study designs of included studies** • RCTs with other non RCTs	**a) Person-directed interventions** • Occupational Therapy or Vocational Rehabilitation *A personal recovery perspective allows OTs in mental health and vocational services to focus on the person's own preferences regarding work and to create supportive environments. Such perspective could help mitigate long-term sick leave, advance working life inclusion, and decrease high costs for society and individuals.* **Number of participants** • Not stated **Comparison groups** • Usual care • Other interventions	*larger effects and higher costs. An Occupational Therapy intervention added to treatment for major depression was indicated to be cost-beneficial and an advanced supported employment was cost-saving. The methodological quality varied considerably between studies.* *This review shows the cost-effectiveness of the SE IPS intervention for people with mental health disorders in several contexts, as well as an indication of the SE IES intervention to be cost saving. Additionally, a work focussed OT intervention for people with major depression indicated a likeliness to be cost-beneficial.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Number of studies included • *9 studies* **Overall rating** • Moderate		
Lambreghts (2023)	**Countries** Sweden The Netherlands Denmark **Aims** *This systematic review addresses two questions: (1) Which interventions for burned- out sick- listed employees have been studied?; (2) What is the effect of these interventions on RTW?* **Type of review** • Narrative synthesis **Psychological and mental health issues** • Burn out. **Study designs of included studies** • RCTs with other non RCTs	**Interventions** **a) Person-directed interventions** • Multiprogramme (overall) *Five studies described person-directed interventions, including cognitive behavioural therapy, light therapy, physical activity, memory training and stress management* **b) Workplace focused interventions** • Stakeholder engagement *One study described a workplace-directed intervention (convergence dialogue meeting with the patient and the supervisor* **c) Multicomponent/ multifaceted intervention**	**a) Person-directed interventions** *None of these studies showed a significant difference in RTW between the intervention and comparator group.* **b) Workplace targeted interventions** *The finding in our review that a convergence dialogue meeting between patient and supervisor improved RTW is in line with previous research recognising a lack of super visor support as a barrier for RTW.* *This study showed no significant improvement in RTW in the intervention group compared with CAU."* *"Person-directed, workplace-directed and combined intervention compared with each other The study that compared a person-directed, workplace-directed and combined intervention with each other showed no*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Number of studies included • *8 studies* **Overall rating** • Moderate	*A person-directed intervention, a workplace-directed intervention and a combined intervention33 and compared these interventions with each other (while the other studies compared the intervention with care as* **Number of participants** • *776* **Comparison groups** • Usual care • Other interventions	*significant difference in RTW between these interventions*
Mallick (2022)	**Countries** Australia **Aims** *To investigate the impact of co-location partnerships between adult mental health and disability employment services (DES) on employment outcomes and consumer choice of work for adults with a SPMI* **Type of review** • Narrative synthesis **Psychological and mental health issues**	**Interventions** • **Multicomponent/ multifaceted intervention** *These included the following: (i) IPS; (ii) DES practice, funding, policy, and reform within the"* *"Australian mental health system; and (iii) barriers to participation in DES programmes* **Number of participants** • Not stated	*Findings highlight the importance of joint, co-location partnerships between mental health and employment services, including a collaborative approach to policy reform between both services, to assist adults with a SPMI to gain and sustain competitive employment*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	• *Serious persistent mental illness (SPMI)* **Study designs of included studies** • Non RCTs and qualitative research **Number of studies included** • *12 studies* **Overall rating** • Low	**Comparison groups** • Not stated	
Moe-Byrne (2022)	**Countries** UK USA European countries **Aims** *To assess the effect of tailored digital health interventions provided in the workplace aiming to improve mental health, presenteeism and absenteeism of employees.* **Type of review** • Narrative synthesis **Psychological and mental health issues** • *participants that screened positive for*	**Interventions** **Workplace focused interventions** • Use of technology [*tailored digital health interventions Digital technology includes digital decision aids or materials delivered through a computer, tablet, smartphone or email. This material could be delivered as a website, app or downloadable software. This digital intervention could be combined with further support such as group sessions, individual counselling, or direct feedback from a health professional (such as an occupational physician, a psychotherapist, a coach*	*The results are promising to the advantage of tailored digital interventions regarding presenteeism, sleep, stress levels, and physical symptoms related to somatisation; but less for addressing depression, anxiety, and absenteeism.* .

Short Title	Study Characteristics	Intervention characteristics	Key findings
	depression, somatisation, or anxiety" "participants were on sick-leave between 4 and 26 weeks" or "poor sleep • Stress **Study designs of included studies** • RCT only **Number of studies included** • *7 studies (8 publications)* **Overall rating** • High	*in the workplace, or psychiatric, so-called blended e-Health interventions.* **Comparison groups** • Usual care • Waiting list	
Noyes (2018)	**Countries** Not stated **Aims** *Presents evidence for the effectiveness of interventions that occupational therapy practitioners can provide to help people with SMI improve and maintain performance and participation in employment and education.* **Type of review** • Narrative synthesis *Mixed methods*	**Interventions** **a) Person-directed interventions** • Occupational Therapy or Vocational Rehabilitation **Number of participants** • Not stated **Comparison groups** • Not stated	*For employment, strong evidence was found for the Individual Placement and Support (IPS) model and cognitive interventions. For education, moderate evidence was found for supported education interventions.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Psychological and mental health issues • *Serious mental illness (SMI)* **Study designs of included studies** • RCT only • Systematic reviews **Number of studies included** • *57 studies* **Overall rating** • Low		
Park (2022)	**Countries** UK USA European countries Japan **Aims** *Comprehensively reviewed evidence on the economic case for SE/IPS programmes.* **Type of review** • Narrative synthesis **Population** • Participants with mental health conditions	**Interventions** **a) Person-directed interventions** • Occupational Therapy or Vocational Rehabilitation *Traditional vocational rehabilitation, sheltered work, and return to work initiatives* • Person-centred RTW **Number of participants** • Not stated	• Cost-effectiveness *There is a strong economic case for the implementation of SE/IPS programmes. The economic case is conservative as evidence on long-term impacts of programmes is limited SE/IPS, when well- implemented can lead to significantly improved work-related out comes and/or reductions in welfare payments at least in the short term, which partially or even completely offset the costs of intervention. Well-designed RCTs also demonstrate cost-effectiveness from a healthcare perspective; the economic case can be strengthened further*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Psychological and mental health issues • Participants with mental health conditions **Study designs of included studies** • RCTs with other non RCTs **Number of studies included** • *56 papers covering 54 economic studies* **Overall rating** • High	**Comparison groups** • Not stated	*when multiple impacts across employment/welfare, health, and other sectors are considered.*
Pomaki (2012)	**Countries** USA Canada Norway Denmark **Aims** *To summarize evidence on workplace-based work disability prevention (WDP) interventions in workers with common mental health conditions (CMHCs).* **Type of review** • Narrative synthesis	**Interventions** **a) Person-directed interventions** • Occupational Therapy or Vocational Rehabilitation *Facilitation of access to clinical treatment* *Workplace-based high-intensity psychological intervention* **b) Workplace focused interventions** • Stakeholder engagement *Facilitation of navigation through the disability management system*	*Moderate evidence was found that facilitation of treatment improved work functioning, quality of life and economic outcomes, with limited evidence for work absence duration.* *Moderate evidence was found that psychological interventions, primarily cognitive-behavioral therapy, improved work functioning, quality of life, and economic outcomes.* *Moderate evidence indicated that facilitation of navigation through the disability management system improved work absence duration.* *Workplace-based interventions could improve work disability outcomes for workers with CMHCs.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Psychological and mental health issues • Participants with mental health conditions [*The study population of interest included workers currently absent from work for any period of time or struggling at work due to a mental health diagnosis consisting of a mood, anxiety or adjustment disorder.*] **Study designs of included studies** • RCTs with other non RCTs **Number of studies included** • Details [info] *8 studies* **Overall rating** • High	**Number of participants** • *Nearly 3000* **Comparison groups** • Not stated	*Facilitation of access to clinical treatment, and workplace-based high-intensity psychological intervention were most effective in improving work functioning and quality of life, and in reducing costs.*
Slater (2023)	**Countries** USA Canada Sweden The Netherlands Denmark Norway Germany	**Interventions** **a) Person-directed interventions** • Occupational Therapy or Vocational Rehabilitation **Number of participants** • Details [info] *2825*	*Results indicate W-CBT is effective at facilitating RTW outcomes for people experiencing mild-to-moderate mental health conditions. It is recommended for a program to be labelled W-CBT it is a stand-alone intervention where CBT is delivered with an understanding RTW is the goal. Thus, W-CBT strategies and techniques are always framed by matters, subjects and contexts related to work.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Aims To *define W-CBT, describe its component parts, and evaluate whether it is effective at facilitating RTW*. **Type of review** • Narrative synthesis **Psychological and mental health issues** • Participants with mental health conditions *Participants were experiencing mental health conditions that could affect the working aged population, such as depression, anxieties and adjustment conditions*. **Study designs of included studies** • RCTs with other non RCTs • Non RCTs and qualitative research • Systematic reviews **Number of studies included** • *23 studies 25 publications*	**Comparison groups** • Not stated	

Short Title	Study Characteristics	Intervention characteristics	Key findings
	Overall rating • Moderate		
Weld-Blundell (2021)	**Countries** UK USA Canada Sweden The Netherlands Switzerland Japan Hong Kong **Aims** *To systematically review interventions aimed at improving employment participation of people with psychosocial disability, autism, and learning disability*. **Type of review** • Narrative synthesis **Psychological and mental health issues** • Participants with mental health conditions *Most studies with people with psychosocial disabilities included individuals with a variety of mood, anxiety, and/or psychotic disorders"*	**Interventions** **a) Person-directed interventions** • Multiprogramme (overall) **Number of participants** • *studies of participants with psychosocial disabilities (n = 2465) and three studies of participants with autism (n = 214)* **Comparison groups** • No intervention • Other interventions	*For people with psychosocial disability, we found evidence for a beneficial effect of IPS, IPS plus other interventions, and some supported employment interventions on open employment outcomes. There was evidence for a beneficial effect of Individual Placement and Support compared to control conditions in 10/11 studies. Among young adults with autism, there was some evidence for the benefit of Project SEARCH and ASD supports on open employment.*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	"Three studies included participants with schizophrenia only, three studies exclusively included individuals with psychosis, and in one study all participants had post-traumatic stress disorder (PTSD). In the three studies including participants with autism, youth were assessed as having autism with a medical diagnosis of ASD or an educational identification of autism. **Study designs of included studies** • RCT only **Number of studies included** • *26 studies* **Overall rating** • Moderate		
Zheng (2022)	**Countries** UK USA Canada European countries Japan **Aims** *To identify, appraise, and summarize outcomes reported in trial-based economic*	**Interventions** **a) Person-directed interventions** • Occupational Therapy or Vocational Rehabilitation **Number of participants** • *1035*	*Trial-based economic evaluations of supported employment for adults with severe mental illness remain limited and heterogeneous. Across several European countries as well as Japan, IPS appears to be a cost-effective alternative to TVR with regard to vocational outcomes, although cost-effective ness varied based on the cost perspective, intervention fidelity, and geographical location. There is a*

Short Title	Study Characteristics	Intervention characteristics	Key findings
	evaluations of Individual Placement and Sup- port programmes for adults with severe mental illness. **Type of review** • Narrative synthesis • Economic synthesis/Modelling **Psychological and mental health issues** • Participants with mental health conditions *Serious mental illness* [*adults at least 18 years of age diagnosed with SMI: "schizophrenia and schizophrenia-like disorders, bipolar disorders, or depression with psychotic features"* **Study designs of included studies** • RCT only **Number of studies included** • *7 studies* **Overall rating** • High	**Comparison groups** • Other interventions *any type of TVR as the comparator*	*need for more US-based studies, where IPS has not been as widely adopted.*

Appendix G: Key characteristics of interventions for individuals with physical health and disabilities

Short title	Study characteristics	Intervention characteristics	Findings
Bernaers et al., (2023)	**Country** Multiple countries (not stated) **Aim** To examine the effectiveness of a multidisciplinary intervention, with or without an additional workplace intervention, for (sub)acute low back pain among adults **Population** Individuals with (sub)acute low back pain **Type of study design** Narrative synthesis	**Health focus intervention** Multiple health and/or vocational service (e.g. a combined use of physiotherapy, cognitive behavioural therapy, medications and work-place interventions with physical exercise) **Level of intervention** Multilevel service interventions **Comparison** Multidisciplinary interventions involving workplace intervention vs less extensive interventions and usual care	Mixed and conflicting results when comparing a multidisciplinary intervention with usual care, with one finds higher chance of return to work and one finds delayed return to work; but it seems that a more extensive multidisciplinary intervention would have comparable effects as a less extensive multidisciplinary intervention for work-related outcomes. It is concluded that adding a workplace intervention to usual care and subdividing patients based on work-related characteristics seems beneficial for return to work.
Carroll et al., (2010)	**Country** UK, Canada, Netherlands, Sweden	**Health focus intervention** Workplace intervention, e.g. schedules or tasks modifications, exercise therapy, employer consultation (communication between occupational health practitioner and	Interventions involving consultation and consensus between stakeholders (i.e. the employee, the workplace and occupational health professionals), and subsequent work

Short title	Study characteristics	Intervention characteristics	Findings
	Aim To assess whether interventions involving the workplace are more effective in supporting RTW among adults on sick leave than interventions that do not have a workplace component. **Population** Employees on long-term sick leave **Type of study design** Narrative synthesis – systematic review **Level of intervention** Workplace and or employer/representative level **Delivery setting** Workplace	the employer), workplace modification or a combination of these interventions. **Level of intervention** Workplace intervention	modifications, appear to be more effective at returning to work people on sick leave with back pain for more than two weeks than interventions that do not involve such elements. Such interventions are also more cost-effective than their comparators. Workplace-related exercise interventions appear to be more effective than usual care, but no more effective than non-workplace-related exercise programmes.

Short title	Study characteristics	Intervention characteristics	Findings
	Comparison Interventions with vs without workplace element		
Palmer et al., (2012)	**Country** Not stated **Aim** To evaluate effectiveness of different types of non-pharmacological intervention in workplace or community settings in reducing sickness absence and job loss and promoting return to work (RTW) among workers with established MSDs **Population** Workers with musculoskeletal disorders **Type of study design** Narrative synthesis **Level of intervention** Multicomponent (personal and workplace level)	**Health focus intervention** Multicomponent intervention **Level of intervention** (i) the individual, (ii) his/her work or workplace or (iii) health care and other services to which he/she had access	The median effect (mean reduction in sickness absence in intervention vs control group) across these comparisons being 1.11 (IQR 0.32-3.20) days/month. Small or lower-quality studies tend to report greater benefits of treatments than large or high-quality studies. No interventions were clearly superior to others, although studies that involved setting graded tasks were slightly more positive. Interventions involving workplace adaptations/ assessments or extra services were somewhat more beneficial in reducing days lost, and those that involved brief interventions (not >12 h in total), appeared more effective than those that took longer, and above 32 h there was little evidence of benefit. The benefits of intervention were somewhat greater in workers with <12 weeks of sickness

Short title	Study characteristics	Intervention characteristics	Findings
	Delivery setting Workplace and community **Comparison** No intervention		absence at baseline as compared with workers off work for longer.
Tripney et al., (2019)	**Country** Nigeria, India, Brazil, Bangladesh, Philippines, Zimbabwe, Kenya, Vietnam, Chile, China **Aim** To identify, appraise, and synthesize studies of interventions to improve labour market outcomes of adults in developing countries with physical and/or sensory disabilities. **Population** Adults aged 16–65 years with physical and/or sensory impairments associated with disability. **Type of study design** Narrative synthesis – systematic	**Health focus intervention** Any (single and multicomponent intervention) **Level of intervention** Multilevel interventions, e.g. Occupational rehabilitation, Treatment & therapy, Regulations, legislation & policies.	Positive effects on paid employment (based on 12 studies), self-employment (2 studies), income (4 studies), motivation to work (1 study), professional social skills (1 study), hours worked (1 study). Meaningful moderation effects cannot be concluded.

Short title	Study characteristics	Intervention characteristics	Findings
	review **Level of intervention** Multicomponent – not specified **Delivery setting** Not specified; multiple **Comparison** Not specified		
Wong et al., (2021)	**Country** Not stated **Aim** (1) Identify job accommodations and summarize the potential use of accommodations for persons with physical disabilities, (2) Review the effectiveness and efficiency of job accommodations in promoting employment outcomes of persons with physical disabilities, (3) Explore the barriers and facilitators that influence the reception and provision of	**Health focus intervention** Job accommodations - (1) modifying architecture/ workplace environment to increase workplace access, (2) modifying job responsibilities, (3) modifying workplace policies, (4) providing supportive personnel, (5) flexible scheduling, and (6) providing assistive technologies. **Level of intervention** Workplace intervention	**Health related outcomes** Helping with physical functioning, preventing disability or decreasing symptoms Increasing self-esteem Increasing social participation inside or outside of work **Employment related outcomes** Cost of job accommodations Effectiveness and efficiency outcomes - Acquiring a job, maintaining a job, reducing job disruption - Increasing work productivity, improving ability to perform essential job functions - Increasing income

Short title	Study characteristics	Intervention characteristics	Findings
	workplace accommodations for employees with disabilities, and (4) Describe the rates at which job accommodations were provided. **Population** Employees on long-term sick leave **Type of study design** Narrative synthesis – systematic review **Level of intervention** Workplace **Delivery setting** Workplace **Comparison** Not specified		Job outcomes from employer's perspective - Employers' satisfaction and perceived benefits - Employer-perceived effectiveness or efficiency Quality of employment - Increasing work hours - Decreasing absence - Gaining positive work experience **Findings** Some effectiveness Findings summary Some but weak evidence on job accommodations' effectiveness on promoting work productivity, increasing work hours, helping in maintaining employment, decreasing absence due to illness, and improving physical and behavioural wellness. No statements of specific types of job accommodations and disabilities can be concluded. Qualitatively speaking, Employees' self-determination is a key factor in influencing whether they request and receive job

Short title	Study characteristics	Intervention characteristics	Findings
			accommodations, including awareness of their own needs for accommodations, knowledge about job accommodations and resources, the extent of self-efficacy, readiness to disclose a need for accommodations to a supervisor or human resource staff, ability to advocate for their accommodation needs, and communication skills.

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