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ISCRR
Institute for Safety, Compensation and Recovery Research


# Return to work

## A meta-review

Meta-review of effective interventions for supporting people with a condition resulting in work disability to engage in or return to work

**Dr Beth Costa / Dr Kate Gibson / Professor Alex Collie**

A joint initiative of

WorkSafe VICTORIA · TAC Transport Accident Commission · MONASH University

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## ABBREVIATIONS

| | Item |
|---|---|
| ABI | Acquired Brain Injury |
| AMSTAR | Assessing the Methodological quality of Systematic Reviews tool |
| CBT | Cognitive Behavioural Therapy |
| CI | Confidence Interval |
| HIV+ | Human Immunodeficiency Virus – Positive |
| IPS | Individual Placement and Support |
| IQR | Interquartile Range |
| ISCRR | Institute of Safety Compensation and Recovery Research |
| LBP | Low Back Pain |
| MH | Mental Health |
| MSD | Musculoskeletal Disorders |
| MSK | Musculoskeletal |
| PRISMA | Preferred Reporting Items for Systematic Reviews and Meta-Analyses |
| PST | Problem-Solving Therapy |
| PTSD | Post-Traumatic Stress Disorder |
| RCT | Randomised Control Trial |
| RR | Relative Risk |
| RTW | Return To Work |
| SCI | Spinal Cord Injury |
| TAC | Transport Accident Commission |
| TBI | Traumatic Brain Injury |
| VR | Vocational Rehabilitation |

# EXECUTIVE SUMMARY

## Background and Purpose

This evidence review was conducted to identify interventions that were effective at supporting individuals with work disability due to illness or injury to engage in or return to work. We sought to identify the characteristics of effective interventions, including when, where and by whom effective interventions are delivered. The return to work process is influenced by multiple factors and involves multiple stakeholders. In order identify relevant interventions that address this complexity we applied the broad concept of work disability to this project. This concept extends beyond trauma to include other injuries and health reasons for unemployment.

It is intended that the findings from this evidence review will provide a better understanding of the types of effective interventions available to TAC to improve employment outcomes for their clients through the development of a new enterprise-wide Work Strategy.

## Our Approach

The approach used was a meta-review of scientific evidence. This is a synthesis of existing systematic reviews on the topic - namely interventions to support individuals stay at, engage in or return to work. A search conducted in November 2016 identified 38 relevant systematic reviews that described 100 individual interventions. These interventions were classified into 10 higher-order categories and the finding of the reviews were summarised in relation to these categories. Seven of the intervention categories were for single component interventions: workplace accommodation, physical therapy, psychotherapy, education, RTW coordination, policy initiatives, and clinical interventions. Three multicomponent intervention categories were also created: employer-led, workplace based, and structured vocational rehabilitation.

## Findings

The key findings from the meta-review are provided below, presented for job-attached and job-detached individuals:

- Multicomponent **employer-led interventions** are effective for job-attached clients, particularly when they include work accommodation.
- Multicomponent **workplace based interventions** are effective for job-attached clients with a range of physical and mental health condition, particularly when they include work accommodation, healthcare services and RTW coordination.
- **Structured vocational rehabilitation** are effective for job-detached clients with complex conditions, particularly when they include healthcare services and coordination.
- **Policy initiatives** targeting employers and clients are effective for job-attached and job-detached clients but can have low uptake.

## Key Messages

Based on the available evidence, the following areas may be considered in the development of the TAC's new enterprise-wide Work Strategy:

- Work collaboratively with relevant stakeholders (healthcare, employers and clients) to develop and implement multicomponent workplace based interventions, particularly for job-attached clients with physical and mental health conditions.

    - The interventions need to be tailored to client needs and of the right intensity to improve outcomes.
    - Comprehensive new interventions may require longer term planning and development, however, optimising coordination of existing interventions that target multiple factors may be a feasible short term approach.
- Develop structured vocational rehabilitation programs, such as the Individual Placement and Support model for job-detached clients with complex health conditions.
- Examine the feasibility of including policy initiatives, such as financial incentives, within multicomponent intervention approaches.
- Avoid stand-alone educational, clinical or RTW coordination interventions.

# INTRODUCTION

This evidence review was conducted to identify interventions that were effective at supporting individuals with work disability caused by illness or injury to engage in or return to work.

The health benefits of work are well recognized and wide ranging.[1] Work disability occurs when a worker is unable to remain at, or return to, work because of injury or illness.[2] It is a broad concept that incorporates the range of physical, psychological, social, administrative, and/or cultural reasons for not being able to participate in work. Work disability is associated with a range of negative health, financial and social outcomes that generate significant costs for individuals, employers, insurance, and compensation schemes. For example, long-term compensation claimants, like the long-term unemployed, experience greater social isolation and tend to have diminished health outcomes.[3]

Return to work (RTW) following illness or injury can lead to positive outcomes, such as reduced recovery time, and improved physical and psychological health. Recovery from injury may also be improved by early RTW.[1]

The focus of this review is on work disability interventions that aim to support work disabled individuals and employment outcomes. Work disability interventions are considered effective if they lead to sustained engagement in, or return to, work. A large number of work disability interventions have been developed, trialed and reported in the literature. These interventions differ according to a range of characteristics, including: whether their objective is to influence a person's capacity to find new employment, return to an existing workplace or, stay at work; whether they target specific patient groups, job-detached unemployed persons, or job-attached persons on sick leave; whether they are initiated by the employer, healthcare provider, or compensation body; and, their level of complexity, for example a single component or multicomponent intervention.

Identifying the features of effective interventions can inform the development and implementation of locally implemented employment programs which are likely to generate positive outcomes for TAC clients and the TAC.

## Review Questions and Scope

The key research questions for this review were identified in consultation with the TAC and included:

1. Which interventions for supporting people with a work disability to engage in or return to work are effective in improving employment outcomes?
2. What are the characteristics of effective interventions, in particular;
    - When should the intervention be delivered?
    - Where and by whom should the intervention be delivered?
    - What are the core elements of interventions?
    - Are there any differential effects of certain interventions?

This report was prepared by the ISCRR Evidence Review hub and presents a meta-review of scientific evidence. This review is a standalone component of the larger Return to Work project (Project 176) and is complemented by a state analysis and data analysis.

# METHOD

## Literature Search

A targeted snowball search for systematic reviews of primary intervention studies with employment outcomes was conducted in November 2016. One reviewer searched the Medline, EMBASE, CINAHL, PsychInfo, Cochrane Library, Scopus and Web of Science electronic databases using the search strategy "return to work" OR "return-to-work" OR "recovery costs" OR "time off work" OR "lost-time" OR "stay at work" OR "professional integration" OR "reintegration". The search was restricted to English language peer-reviewed systematic review papers published since 1990. The reference lists of meta-review articles identified in the search were cross-checked for additional systematic review articles that fit the inclusion criteria. A targeted search of the grey literature database National Institute for Health and Care Excellence (NICE) was also conducted. Finally, the preliminary list of included review papers was sent to key international experts in the field for comment to ensure all relevant recent systematic reviews were included.

All identified systematic review titles were screened independently by two reviewers and reviews were retained if they described a systematic review or meta-analysis of evaluation studies of interventions designed to support people with a work disability to engage in or return to work. Publications of individual studies were excluded, as were non-systematic literature reviews. Where an updated review was available, the original systematic review was excluded if the update included the original review period. Following the initial screening process, full text articles were obtained and assessed for eligibility based on specific criteria developed a priori by the ISCRR project team in collaboration with the TAC project sponsors. The inclusion and exclusion criteria are outlined below.

### Population

Systematic reviews were included in this meta-review if they reviewed primary studies involving adults with a physical and/or mental health condition of any cause resulting in work disability, inclusive of specific health conditions, such as musculoskeletal disorder, traumatic brain injury or depression, and general population groups with, or at risk of, work disability. Participants in the primary studies could therefore be workers, either at work or on sick leave, or work-detached persons. Studies involving persons aged younger than 18 years were excluded.

### Intervention

Systematic reviews of any service, program or policy for assisting individuals stay at, engage in, or return to work were eligible for inclusion in this review. Interventions could comprise one or more specific strategy and could be delivered as a stand-alone activity or as one component of a multicomponent intervention program. Furthermore, included systematic reviews could evaluate the effectiveness of one or more type of employment intervention.

### Outcomes

To be included, at least one employment-related measure needed to be reported as a primary outcome in the systematic review. Employment outcomes could include: return to work, work participation, stay at work, volunteer work, duration of sick leave, or work functioning. Secondary outcomes captured could include: client satisfaction, intervention cost-effectiveness and/or community participation. Systematic reviews that only included health-related variables as primary outcomes were excluded, as were economic evaluations of vocationally-focussed interventions. Systematic reviews were not required to include meta-analyses of outcomes; reviews that described qualitative narrative and best evidence syntheses were included.

## Classification of studies

The PRISMA flowchart (see Appendix 1) provides an overview of the study identification process. Initially, 480 records were identified through the database searches and a further 13 records through expert consultation and scanning of reference lists of other meta-reviews. Following removal of duplicates, the titles and abstracts of 450 reviews were reviewed manually. After the initial title and abstract screen, 63 reviews were identified as potentially relevant. Full text reviews were obtained and assessed for eligibility. Twenty-five full text reviews were excluded as they did not meet the inclusion criteria for this meta-review. Thirty-eight reviews were retained for data extraction and synthesis. As per the recommendations of Aromataris et al.,[4] two reviewers independently and systematically extracted information on systematic review details, included primary study characteristics, studied interventions, selected outcomes, and effects on employment reported by each included review.

## Quality assessment

Two reviewers independently evaluated the methodological quality of systematic reviews using the Assessing the Methodological Quality of Systematic Reviews (AMSTAR) tool.[5] The AMSTAR appraises the methodological rigour of systematic reviews across 11 items (see Appendix 2). Systematic reviews received a score for each checklist item adequately addressed. No score was given for inadequately addressed items or where a judgement could not be made. Review papers could achieve a possible total score of 11. Systematic reviews that adequately addressed 9 to 11 checklist items were judged to be high quality. Moderate quality reviews were those that addressed five to eight items, while low quality reviews addressed four or fewer items. In the case of disagreement between reviewers, consensus was reached through discussion. The AMSTAR score was used to determine the level of evidence for each intervention category. As we wished to consider only moderate to strong evidence, low quality systematic reviews were excluded from the final evidence synthesis.

## Data synthesis

We adopted a meta-review approach to assess the current body of evidence on work disability interventions. The systematic reviews included in our meta-review each provided summary findings regarding the effectiveness of different types of interventions based on an evaluation of the individual interventions. We synthesised the findings from the systematic reviews, rather than from the individual studies. As such, the findings of this meta-review are based on the systematic review authors' findings and interpretations, rather than the conclusions reached in each individual primary study (see Appendix 3).

The three-stage process used to synthesise the findings from the included systematic reviews on work disability interventions is provided below.

### 1. Categorisation of the type of intervention into higher-order intervention groupings

In the first stage, we created an inclusive list of 10 higher-order intervention categories based on accepted definitions of work disability interventions in the literature[2, 6] and expert knowledge of the research team. Categories ranged along a continuum of intervention complexity from single components to broad multicomponent approaches. Interventions considered in systematic reviews were then sorted into the predefined categories according to key intervention characteristics described by review authors (see Tables 2 and 3 for broad intervention categories). This process was conducted independently by two reviewers. In the case of disagreement a third researcher was consulted. The systematic reviews tended to describe and evaluate multiple interventions from one

or more intervention category. Therefore the total number of interventions exceeded the number of reviews included for meta-review (see Table 2).

### 2. Determination of the overall direction of effect of each intervention category on employment outcomes

In the second stage, we determined the direction of the effect of interventions on employment outcomes reported in each systematic review. This determination was based on the review authors' summary findings and the overall effect within each of our 10 broad intervention categories. We used the following rules adapted from Cullen et al.[7]:

- A positive and no negative summary findings in systematic reviews was classified as a positive effect in the broad intervention category;
- Both positive and no effects summary findings was classified as a positive effect in the broad intervention category;
- Only no effects was classified as no effect at the broad intervention category level; and
- Any negative effect was classified as a negative effect at the broad intervention category level.

### 3. Assessment of the strength of the evidence for each intervention category

Finally, we determined the strength of the evidence supporting findings for the 10 intervention categories based on the above 2 steps and the AMSTAR score (see Table 1). A strong level of supporting evidence required a positive effect in at least 80% of the summary intervention findings within each broad intervention category. For example, a strong level of evidence to support workplace based interventions required that at least 80% of the 17 different workplace based interventions which were described across 7 systematic reviews showed a positive effect on employment outcomes. A moderate level of evidence required that the effect was positive in at least 60% of summary findings, limited if the effect was positive in 50-59% of summary intervention findings, and inconclusive if the effect was positive in fewer than 50% of the summary intervention findings. An inconclusive level of evidence rating indicated a lack of available evidence to establish the effectiveness of an intervention category. It did not indicate a broad intervention category was likely to be ineffective.

*Table 1. Levels of evidence determination*

| Level of evidence | Definition | Rule |
|---|---|---|
| *** Strong | High and moderate quality systematic reviews demonstrating consistent results of a positive effect | AMSTAR review rating: High 9-11, or mix of High and Moderate 5-8<br>Positive effect in at least 80% of intervention findings |
| ** Moderate | High and/or moderate quality systematic reviews demonstrating consistent results of a positive effect | AMSTAR review rating: High 9-11 or Moderate 5-8<br>Positive effect in at least 60% of intervention findings |
| * Limited or contradictory | Mixed or inconsistent evidence of a positive effect in high and moderate quality reviews | AMSTAR review rating: Moderate 5-8<br>Positive effect in only 50% to 59% of intervention findings |
| ? Inconclusive | Inconclusive research evidence at present | AMSTAR review rating: High 9-11 or Moderate 5-8<br>Positive effect in less than 50% of intervention findings |

### *Mapping of higher-order intervention groupings*

A range of work disability models have been proposed in an effort to understand and guide development of interventions to address work disability. A biopsychosocial view of work disability acknowledges that interactions among biological, psychological and social factors have an impact on an individual's ability to work. The Sherbrooke model of work disability was developed by Loisel to conceptualize the multiple personal and environmental determinants of work disability and RTW.[8] According to the model, the onset and duration of work disability are determined by the interaction of factors across the personal, healthcare, workplace and government/regulator systems. These systems operate within wider cultural and political contexts.

The ISCRR project team drew on a modified and extended version of the Sherbrooke model of work disability for the purposes of the current project. The model describes five broad systems:

- Workplace;
- Health;
- Personal;
- Regulator/government; and
- Social.

Interventions identified in the reviews were mapped to the modified Sherbrooke model systems according to the lead and target environment/s to provide additional insights into the types of work disability interventions which different sectors offer and involve different stakeholders.

# RESULTS

## Characteristics of systematic reviews

Each included review contained between two and 154 primary studies, with a total of 614 primary studies captured. One review identified zero relevant studies for their review of interventions.[9] The number of primary studies reviewed by multiple systematic reviews was not identified. It is probable that a proportion of studies are duplicated by being considered in more than one included systematic review.

The systematic reviews included 26 journal publications, nine Cochrane reviews, two government commissioned reviews and one Campbell review. Seven reviews included meta-analyses of primary data and an additional four included primary qualitative studies.

We assessed methodological quality as high in 21 reviews, moderate in 15 reviews, and low in two. Appendix 4 provides details of the quality assessment of included systematic reviews as well as a summary of review authors' quality appraisal of primary studies.

The table found in Appendix 5 shows the characteristics of the 38 systematic reviews included for meta-review. Review papers were published between 2002 and 2016. Cullen et al. was in press at the time of writing this report and was included for review. The earliest primary study was published in 1966 and the most recent in 2015. Twenty systematic reviews considered primary studies published since 1990, while 13 included primary studies published since 2000.

## Populations targeted

Nineteen included systematic reviews evaluated interventions targeted to specific or general physical health conditions, including stroke, cancer, chronic rheumatic disease, non-progressive ABI, MSK or other pain, knee osteoarthritis, TBI, MSD, traumatic upper limb injury, chronic low back pain (LBP), and HIV. An additional seven review papers evaluated interventions targeting mental health (MH) conditions, and six evaluated interventions targeting mental and/or physical health conditions. Six systematic reviews evaluated interventions directed at workers on sick leave irrespective of the cause for work absence.

## Interventions evaluated

From the 38 systematic reviews we identified 100 individual interventions that we classified according to our 10 broad intervention categories (see Table 2 below). The most common types of interventions examined in the literature were vocational rehabilitation, workplace based interventions and psychotherapy. Most reviews (n=21) examined one type of individual intervention, those that examined more than one individual intervention ranged from a review of two to more than 10 different types of interventions. Similarly, most reviews (n = 25) evaluated interventions from a single broad intervention category, however this ranged from two categories up to six broad intervention categories (data not shown in table).

*Table 2. Number of interventions and reviews per intervention category*

| Intervention category | N interventions (n reviews) |
|---|---|
| **Single component** | |
| Workplace accommodation | 7 (6) |
| Physical therapy | 8 (7) |
| Psychotherapy | 18 (13) |
| Education | 4 (4) |
| RTW coordination | 7 (5) |
| Policy initiatives | 7 (3) |
| Clinical | 5 (4) |
| **Multicomponent** | |
| Employer led | 2 (2) |
| Workplace based | 21 (9)* |
| Vocational Rehabilitation | 23 (16) |

Note. * Includes two interventions from two low quality reviews not included in evidence synthesis. Refer to Table 6 for intervention definitions.

## Outcomes evaluated

All systematic reviews considered employment related outcomes as primary measures of intervention effectiveness. Secondary outcomes were inconsistently reported across reviews and included cost effectiveness, health effects and quality of life. Evidence regarding the impact of work disability interventions on any of these secondary outcomes is not considered in this meta-review.

## Evidence of the effectiveness of interventions

In this section we present a synthesis of the evidence regarding the effectiveness of the 10 broad intervention categories to support individuals with a work disability engage in or return to work. We determined an evidence rating for each intervention as described in the Method section, namely where the level of supporting evidence is strong (***), moderate (**), limited (*) or inconclusive (?) (refer to Table 1). Table 3 below provides a summary of the key findings.

### A. Description of Single component interventions [level of evidence]

#### Work accommodation [**]

As Table 3 shows, there was a moderate level of evidence supporting a positive effect for work accommodation based on seven interventions evaluated in four high and two medium quality reviews. Five interventions were reported to reduce sick leave duration and time to first RTW.[7, 10-13]

Evidence from four reviews suggests work accommodation is effective for pain-related and physical disability conditions.[7, 10-12] A medium quality review of 11 studies reported effective work accommodation strategies for physically disabled workers included: vocational counselling, education, support, modified work schedules and organisation, and specialised transportation.[10] The same review reported case-managed work accommodation improved RTW rates for individuals with TBI and was more cost effective than usual care. However, this finding was based on a single non-randomised control study of 94 participants. In another review, interventions comprising job modifications for MSD had a small but positive impact on RTW (median Relative Risk [RR] 1.21, IQR=

1.00-1.60), sick leave duration (median 1.11 days/month, IQR = 0.32-3.20) and avoidance of job loss due to MSD (RR = 1.25, IQR = 1.06-1.71). These findings were based on four methodologically limited primary studies. Cullen et al. found evidence of a positive effect for work modifications but not supervisor training in work accommodations, based on four moderate-high quality studies.

The number of reviews evaluating work accommodation for MH conditions is limited and current evidence is equivocal. There was no evidence that work accommodation for MH delivered as a standalone intervention had an impact on employment outcomes based on one high quality Cochrane review.[12] Another Cochrane review of five RCTs found work modifications and workplace support in combination with psychotherapy reduced sick leave duration but not symptoms or work functioning among depressed workers.[13] The psychotherapeutic component differed across individual studies and specific work modifications provided were not described.

### Physical therapy [**]

We identified a moderate level of evidence in support of a positive effect of physical therapy interventions for physical health conditions across four high and one moderate quality reviews (see Table 3).[7, 11, 16-18] The evidence for specific interventions is mixed.

Physical therapy interventions included graded activity, physical exercise programs, physical conditioning, and a walking program. Graded activity was reported to have a positive effect on employment outcomes in three reviews.[7, 11, 17] However, in one review interventions involving graded activity for MSD were no more effective than other intervention types such as psychotherapy and work accommodation.[11] Physical exercise programs for LBP were found to have a positive effect on RTW in one review based on three RCTs. A workplace-based exercise intervention was not more effective to one delivered outside the workplace.[16] A Cochrane review of 25 RCTs evaluated the impact of physical conditioning for back pain and found some evidence of a positive effect on sick leave duration.[18] Evidence from this review suggests the impact of physical conditioning varies according to timing, intensity and location of delivery. Specifically, the intervention had no effect on sick leave duration for acute back pain, while intense conditioning had a positive effect for subacute back pain when delivered at the workplace or in combination with a worksite visit. Finally, intense physical conditioning was found to have a positive effect on sick leave duration for chronic back pain across 12 months. One review concluded limited, mixed or insufficient evidence for a positive effect of work hardening for work disability.[7]

Dibben considered a range of physical therapy and exercise interventions for LBP and concluded there was weak, mixed or no evidence of a positive effect for any such approaches across 19 included studies. A walking-based physical intervention for cancer initiated by the tertiary level of the healthcare system was found to have no effect on employment outcomes in one Cochrane review.[19]

*Table 3. Summary of review findings*

| Intervention category | Description | Specific target groups | Effect on RTW outcomes | | Summary |
|---|---|---|---|---|---|
| | | | Direction of effect[1] | Level of evidence[2] | |
| | **Single component Interventions** | | | | |
| Workplace accommodation | Modification to existing work conditions, environment, process and/or procedures. | Chronic work disability, pain, MH, depression, MSD | Positive | ** | Appears effective, particularly for pain-related conditions. No evidence of effect for MH when delivered alone but may be effective when combined with clinical intervention (based on two high quality review of RCTs) |
| Physical therapy | Intervention designed to improve physical function and capacity. Includes:<br>Functional restoration: intervention that aims to restore a reasonable level of function for daily living, including work.<br>Physical conditioning: structured exercise and/or exercise advice to increase physical and functional capacity that may not be workplace specific.<br>Work hardening: Individualised work-oriented activities in simulated or actual work task. | Cancer, pain, MSD | Positive | ** | Graded activity and physical conditioning delivered as part of a multicomponent workplace intervention appears effective for pain-related conditions. Mixed findings regarding effect of workplace- versus community-based interventions. |
| Psychotherapy | Intervention designed to improve psychological function, coping, and/or problem-solving. Includes:<br>Cognitive-behavioural therapy (CBT)<br>Problem-solving therapy (PST)<br>Exposure therapy | MH, PTSD, depression, MSD, cancer, SCI, ABI | Positive | ** | Some interventions appear effective, particularly for back pain, MH, cancer and SCI. Mixed findings regarding effect of CBT; work-focussed CBT delivered in combination with PST appears superior to traditional CBT (based on one high quality review) |
| Education | Intervention designed to educate individuals on effective skills, strategies to facilitate coping and RTW. Includes:<br>Psycho-education<br>Physical therapy advice | Cancer, work disability, pain, MH | Positive | ? | Inconclusive evidence on the effect of education on employment outcomes. Limited evidence from one moderate quality review of positive effect for pain-related conditions. |

| Intervention category | Description | Specific target groups | Effect on RTW outcomes | | Summary |
|---|---|---|---|---|---|
| | | | Direction of effect[1] | Level of evidence[2] | |
| RTW coordination | Individualised RTW plan developed and managed by a RTW coordinator or team who coordinates services and communication among stakeholders. May be employer- or third party- led. | ABI, chronic pain, work disabled; SCI | Positive | * | Mixed findings. Structured coordination involving employer, worker and health professional may be effective, particularly for pain-related conditions (based on 4 reviews). Unclear which coordination approach is most effective. |
| Policy initiatives | Strategies to encourage a) employers to employ and/or accommodate work disabled individuals or b) work disabled individuals to engage in or return to work. Includes:<br>Government or insurer funded financial incentives/penalties<br>Government policies | Chronic work disability | Positive | ** | Government-led behaviour change strategies (e.g. financial incentives, support for improving workplace accessibility, schemes to encourage employer involvement in RTW planning) may be effective but suffer from limited awareness and uptake. Strategies implemented in Australia were not identified for review in the search. |
| Clinical | Intervention designed to treat physical, psychological and/or medical condition(s) that involves one or more health discipline. | Cancer, SCI, HIV, pain | Positive | ? | Inconclusive evidence. Specialised pharmacotherapy and medical intervention may have a limited positive effect on employment outcomes for medical conditions such as HIV (based on one high quality review of six studies). |
| | **Multicomponent Interventions** | | | | |
| Employer led | Multicomponent intervention designed to return work attached individuals to the workplace that are initiated, managed and delivered by the workplace. | Pain, MH | Positive | *** | Emerging evidence for effect of multicomponent interventions. Possible effective components identified in one review include: work accommodation, employer-healthcare professional communication, ergonomic worksite visit, and RTW coordination. |
| Workplace based | Multicomponent intervention designed to return work attached individuals to the workplace that are initiated and managed by one or more stakeholders excluding the employer and where at least one component delivered within the workplace. | MH, MSD, pain, ABI | Positive | ***[3] | Multicomponent interventions that incorporate clinical and occupational focussed components and collaboration among employer, worker and healthcare professional show greatest effect on |

| Intervention category | Description | Specific target groups | Effect on RTW outcomes | | Summary |
|---|---|---|---|---|---|
| | | | Direction of effect[1] | Level of evidence[2] | |
| | | | | | employment outcomes across a range of conditions. |
| Vocational Rehabilitation | Multicomponent intervention to support individuals with significant disability or injury and who are not work-attached access and/or engage in work or education. Intervention is initiated, managed and delivered by one or more stakeholders. Includes:<br>Supported Employment such as IPS | Stroke, MS, upper limb injury, rheumatic disease, OA, SCI, pain, ABI | Positive | ** | Multidisciplinary multicomponent interventions show positive effect on employment outcomes for range of conditions. Interventions comprising individualised and on-the-job support (e.g. supported employment, IPS) appear particularly effective. |

*Notes*. [1] Intervention effect criteria: an intervention with a positive effect and no negative effects was classified as positive, an intervention with both positive and no effect was also classified as a positive intervention, and no interventions had only negative or no effect across reviews.

[2] Levels of evidence categories determined by combining intervention effect, quality rating and number of reviews: strong level: consistent evidence from at least 80% of high and moderate quality reviews; moderate level of evidence consistent evidence from at least 60% of high and/or moderate quality reviews; limited level of evidence consistent evidence from 50% to 59% of reviews; inconclusive level of evidence consistent evidence from fewer than 50% of reviews. AMSTAR ratings of systematic reviews used to determine review quality, where high quality reviews achieved an AMSTAR rating of 9-11 and medium quality reviews a rating of 5-8.

[3] The conclusions of two low quality reviews[14, 15] were not considered in this level of evidence determination.

### Psychotherapy [**]

Table 3 indicates a moderate level of evidence in support of a positive effect of psychotherapeutic interventions. Eighteen broad interventions were evaluated in 10 high and three moderate quality reviews. Twelve interventions were reported to have a positive effect on employment outcomes.

Psychotherapeutic interventions appear effective for physical health conditions: LBP [20], MSD [11], cancer [21] and SCI[22]. For example, one review considered diverse psychological interventions for MSD and concluded that there was a reasonable level of evidence in support of CBT for LBP, particularly when delivered as part of a broader intervention approach.[20] In contrast this same review reported the evidence in support of psychological interventions for general MSD was mixed.[20] CBT was associated with a median 1.25 fewer sick leave days per month for MSD in one review of five primary studies.[11] Psychotherapy was often delivered as part of broader intervention approaches but details regarding the broader interventions that included CBT were not provided.

We identified five reviews that evaluated psychotherapeutic interventions for MH.[13, 20, 23-25] Of these, four reported a positive effect on employment outcomes. For example, a medium quality review concluded there is some evidence of benefit of diverse psychotherapies for a range of MH conditions based on seven primary studies.[20] Another high quality review of seven primary studies concluded that workplace-based psychotherapeutic interventions for PTSD, including brief eclectic psychotherapy, graded work exposure and eye-movement desensitisation, had a positive effect on employment outcomes.[25] Finally, a high quality Cochrane review found evidence in favour of problem-solving therapy for adjustment disorder based on nine RCTs.[23] Specifically, the review authors determined that there was moderate quality evidence that PST improved time to partial RTW compared to usual care (mean difference of 17 days across 12 months) and, among those with a clinical diagnosis of adjustment disorder, also improved time to full RTW (mean difference of 24 days across 12 months). In contrast, one high quality review and meta-analysis of 16 RCTs concluded that while CBT-based interventions were associated with a shorter sick leave duration for common MH conditions, overall there was no effect of psychotherapy on RTW.[24]

### Education [?]

There was an inconclusive level of evidence of a positive effect of education interventions. We identified four education-based interventions in three high[7, 17, 26] and one medium[20] quality review. One review reported a positive effect.[20]

Dibben included six primary studies, including two RCTs.[20] Diverse education interventions were evaluated and included medical advice, education and psycho-education for LBP. The authors concluded the evidence provided some weak support for the value of patient education. Details of effective education components were not described.

There was insufficient evidence to determine the impact of education on employment outcomes in a review of three studies.[7] Finally, Odeen included four medium quality studies of workplace education to prevent MSD and concluded such interventions were ineffective in reducing sick leave duration.[17]

### RTW coordination [*]

There was a limited level of evidence in support of RTW coordination or case management interventions. Three high[7, 11, 27] and two moderate[16, 22] quality reviews considered seven broad interventions. There was evidence that four coordination interventions had a positive effect on employment outcomes.

Treneman considered a community-based enhanced case management program for SCI evaluated in a single observational study and found improved employment outcomes at 12 months post discharge from inpatient rehabilitation compared to usual care.[22] Coordination approaches for MSD, including community- or workplace-based multidisciplinary case management, were associated with a median 1.67 fewer sick leave days/month (IQR = 0.31-2.85) across three primary studies.[11]

However, coordination approaches were no more superior to other interventions including psychological, physical, and workplace-based approaches, and were often implemented in combination with other approaches. One high quality review and meta-analysis considered nine RCTs of insurance or third-party led RTW coordination for work disabled persons.[27] Third-party led coordination interventions had a small positive impact on RTW rates over 12 months (RR = 1.08, CI 1.03-1.13). However, no one RTW coordination model was found to be more effective than any other. Finally, no evidence of effect of RTW planning, case management or education and training interventions was reported in a high quality review of four primary studies.[7]

### Policy initiatives [**]

Overall there was a moderate level of positive support for policy initiatives based on one high[26] and two medium[28, 29] quality reviews. Five of seven initiatives targeting employers and work disabled persons were associated with positive employment outcomes. The evidence for specific initiatives was mixed.

Employer-targeted initiatives considered in the reviews included anti-discrimination laws, financial incentives to employ work disabled persons, support for improving work accessibility, and schemes to engage employers in RTW planning. Initiatives targeted to work disabled individuals included financial incentives, case management, education and work trials. One review of employer and worker- focused initiatives implemented by the UK government during the 1990s reported subsequent employment rates ranging 11-50% across 16 primary studies and concluded such interventions were effective.[29] Another review similarly concluded that a number of employer-focused interventions were broadly effective for improving employment rates and reducing sick leave.[26]

Qualitative evidence considered in one review indicated that schemes to support employers to improve workplace accessibility for workers with a disability, such as the UK *Access to Work* grant program, were perceived as positive by recipients and associated with a greater likelihood of RTW following injury.[28, 29] Policy initiatives implemented by the Swedish government to engage Swedish employers in the RTW process were evaluated in seven primary studies.[28] In the only included primary quantitative study within Clayton's review, RTW planning was associated with reduced sick leave duration compared to a matched comparison group.[28] Financial incentives for UK employers were associated with positive employment outcomes.[29] In contrast wage subsidies for employing disabled workers had no effect on employment rates among Danish and Norwegian employers. Similarly UK anti-discrimination legislation had no effect on employment.[28] While there appears to be some support for government-led policy incentives to influence employers' work disability practices these were associated with low awareness, appeal and uptake among the majority of employers.[28, 29]

There is some support that financial incentives for disabled workers improve employment rates. One review of UK-based incentive programs (e.g., *Return to Work Credit*, *Disabled Person's Tax Credit*) evaluated in eight studies concluded such incentives assisted the transition from disability benefits to employment.[26] Another review of four primary studies concluded that in-work benefits for disabled workers had a positive impact on employment outcomes for the small proportion of work disabled persons who received benefits. Similar to the conclusion regarding employer focused initiatives, incentives for work disabled persons were characterised by low levels of awareness and uptake.[29] Of note, no Australian government initiatives were considered in the reviews.

### Clinical interventions [?]

There was an inconclusive level of evidence in support of clinical interventions based on two high[19, 30] and two medium[22, 31] quality reviews. Two of the five interventions in this category had a positive effect on employment outcomes.

A limited number of clinical interventions delivered by tertiary health services for cancer[19], SCI[22], HIV+[30] and back pain[31] have been evaluated. One Cochrane review reported low quality evidence

that a pharmacological Antiretroviral (ART) intervention for HIV+ individuals had a positive effect on employment outcomes across five primary trials.[30] Another Cochrane review considered interventions for cancer patients evaluated in 15 primary RCTs. This review found a multidisciplinary intervention that incorporated vocational counselling and education combined with biofeedback assisted behavioural training or physical therapy led to higher RTW rates compared to usual care (RR = 1.11). In contrast there was no evidence of effect of a function preserving versus a radical medical cancer treatment on employment outcomes based on seven RCTs.[19] Similarly a tele-rehabilitation program focused on skin care, nutrition, bowel and bladder routines, psychosocial issues and equipment needs for SCI had no effect on employment outcomes based on a single primary study in one review.[22]

### *B. Description of Multicomponent interventions [level of evidence]*

Three different multicomponent interventions were identified (see Table 3). Multicomponent interventions differed according to the organisation leading implementation and whether they targeted job-attached or job-detached individuals currently unemployed.

#### Employer-led interventions [***]

There was a strong level of evidence in support of multicomponent employer-led interventions for workers based on two high quality reviews.[32, 33]

One review considered the utility of such approaches for neck pain and upper extremity disorders in five RCTs.[33] This review focussed on pain-related rather than employment outcomes. Only one included RCT of interventions for a highly specific condition (persistent work-related rotator cuff tendonitis) measured employment outcomes. This RCT found that approaches that included RTW coordination and work hardening provided by an occupational therapist based in the workplace were associated with better RTW outcomes compared to a clinic-based physical therapy intervention. As only one relevant primary study was identified, review authors concluded the effectiveness of employer-led interventions for neck pain was unclear.

Gensby investigated effective components of employer-led approaches evaluated in 12 primary studies. Common components included: RTW policies; tailored work accommodation; workplace located physical rehabilitation services; workplace assessment; corporate-based RTW coordination; internal disability claim system; early intervention; and active worker involvement.[32] Review authors reported an inability to determine the specific components or combinations of components that directly impacted employment outcomes. Furthermore, the differential impact of employer-led interventions and their components across disability and injury conditions, industries, and workplaces are unclear from the current limited evidence.

#### Workplace based [***]

There was a strong level of evidence in support of multicomponent workplace based interventions for job-attached individuals. Two high[7, 17] and five medium[16, 20, 34-36] quality reviews evaluated 17 different approaches; 14 of these were found to reduce sick leave duration and time to RTW.[16, 17, 20, 34, 35]

Workplace based approaches appear to be effective for a range of conditions, including: pain, MSK, ABI, MH and cardio-respiratory conditions. For example one high quality review of 26 controlled trials and 10 cohort studies concluded that interventions based at, or linked to, the workplace improved RTW outcomes for pain, MH and MSK conditions.[7] Consistent findings were reported in a review of nine controlled trials of workplace based interventions for workers with back pain on sick leave for at least two weeks.[16] One review found workplace based interventions resulted in a median 1.64 fewer sick leave days per month for MSK conditions across six primary studies.[11] Another review provided evidence from 12 studies that such approaches are effective for traumatic and non-traumatic ABI.[35]

The workplace based approaches reviewed were diverse and comprised varying combinations of workplace and non-workplace components. Compared to single component approaches, the evidence appears to favour multicomponent intervention approaches that incorporate collaboration between the workplace and healthcare providers.[7, 16, 17, 36] There is strong evidence, based on one review of four RCT and six non-RCT studies that approaches incorporating work accommodation and contact between workplace and healthcare provider reduce sick leave duration for pain and MSK conditions.[36] There was moderate support for the intervention components: early contact with a worker on sick leave by the workplace, ergonomic worksite visits, and RTW coordination.[36] Furthermore, comprehensive workplace based approaches incorporating work accommodation, clinical treatment and collaboration between employer and healthcare provider, based on the Sherbrooke model, have consistently been found to have a positive effect on sick leave duration for MSK and pain conditions.[16, 17]

There appears to be a lack of evidence for low intensity multicomponent workplace based approaches. Examples of low intensity approaches include: screening workplaces for hazards and providing education materials; ergonomic adjustment combined with education and early access to healthcare[17]; and interventions primarily conducted external to the workplace with employer consultation and work modification[16]. The evidence suggesting no effect of low intensity approaches is based on reviews of one[16] and two[17] RCTs.

The effectiveness of workplace based approaches for specific MH conditions and severity levels is unclear. Severe MH conditions were excluded in one review.[7] Severe and mild MH conditions were included but not compared in another two reviews.[20, 34]

There was limited and inconsistent evidence for the effectiveness of specific workplace based approaches targeting MH conditions. One high quality review concluded that multicomponent approaches incorporating work-focussed CBT, but not CBT delivered in isolation, reduced sick leave duration for common MH conditions.[7] Similarly, another moderate quality review reported that a workplace based problem-solving skills component for MH had a positive effect on RTW when combined with physical therapy but not when delivered either standalone or as a component of a collaborative care model.[34] This finding was based on a review of six RCTs that evaluated diverse psychological interventions. Consistent with Dewa's conclusions, another review reported limited inconclusive evidence in support of workplace based interventions for MH.[20]

### Vocational Rehabilitation [**]

Overall there was a medium level of positive evidence for Vocational Rehabilitation (VR) across 23 unique interventions considered in five high and six moderate quality review papers. Fifteen interventions were reported to have improved employment outcomes. However, the evidence in support of VR for specific conditions is limited and somewhat inconsistent.

This meta-review identified evidence in support of VR for: chronic work disability,[26, 29, 37] rheumatic disease,[38] LBP[20], MH conditions [20, 39], TBI [40], and SCI [22, 41]. Three reviews considered UK government funded VR services (e.g., *Pathways to Work*, *New Deal for Disabled People*, *ONE advisory service*) for chronic work disabled individuals in receipt of disability benefits.[26, 29, 37] Multicomponent approaches, individualised case-management and employment services were associated with modest increases in work readiness, employment rates, and the proportion of individuals exiting disability benefit support. However, these findings were based on a limited number of primary studies of low to medium quality, including observational and qualitative studies.[26] Biased enrolment of claimants, based on age, disability, family circumstance and/or baseline work readiness, hindered an objective assessment of the effectiveness of government funded VR for different disability groups.[26, 29]

VR appears effective for chronic rheumatic disease based on one review of six primary studies.[38] Specifically, VR resulted in a successful RTW rate of 52-69% at two to six months post intervention

across studies. Two included VR interventions were disease-specific and two were generic VR interventions. However, there did not appear to be any difference in effectiveness of the two types.

Limited research has evaluated the effectiveness of VR for TBI. One high quality Campbell review found VR to be effective for TBI.[40] However, the relative effectiveness of VR compared to an intensive in-hospital program or a virtual reality based cognitive training program for TBI could not be determined due to only one included RCT of a VR intervention. Donker-Cools identified a single cohort study that reported positive effects of supported employment for TBI.[35] However, this study was low quality and review authors concluded there was no evidence VR for TBI was effective.

Supported employment is a common VR approach characterised by assisting work disabled persons to secure competitive employment and providing them with ongoing intensive on-the-job support.[40, 42] A defining feature of this approach is the delivery of training at work as opposed to pre-employment. Supported employment appears effective, particularly for MH conditions[20, 39, 42] and SCI[22, 41]. For example, one high quality Cochrane review of 14 RCTs reported that supported employment improved employment outcomes over 12 months for individuals with severe MH conditions to a greater extent than standard VR approaches.[42] Furthermore, Heffernan reported a 27% greater employment rate associated with an IPS supported employment model compared to conventional VR in one high quality RCT.[39] IPS is an evidence-based standardised supported employment model with seven core principles: 1) emphasis on competitive employment; 2) client choice in program eligibility; 3) rapid job search; 4) integration of clinical and employment services; 5) client preferences considered in job search; 6) provision of individualised job support; and 7) provision of individualised counselling.[43] The impact of IPS on sustained employment is unclear as primary studies considered by Heffernan did not examine employment rates beyond 18 months. However, Roels et al considered a single RCT[44] of a supported employment intervention for SCI delivered on average 12 years post-injury. The intervention was associated with employment rates of 26% at 12 months and 30% at 2 years compared to treatment as usual of 2% and 10%, respectively.

We found no evidence that VR is an effective approach for stroke[45], multiple sclerosis[46], HIV+[30] or upper limb injury.[9] This determination was based on insufficient quality evidence rather than evidence of no effect. For example, in the only identified review of VR for upper limb injury no relevant evaluation studies could be identified for review.[47] Another review considered VR for osteoarthritis and identified two relevant primary studies.[48] Only one of these included studies, that evaluated a 6-month stepwise VR intervention, was associated with a quicker RTW compared to usual care. This finding was based on a single cohort control study that included 37 treatment completers and 42 controls.[49] The review authors concluded there was a lack of evidence to support the use of VR for osteoarthritis.

### *RTW/employment intervention stakeholders*

Finally, we classified interventions described in the systematic reviews according to the modified Sherbrooke model domains based on where the intervention was being initiated or led. Table 4 below shows that evaluated interventions were led by a range of different environments within the system-wide model. We identified that the healthcare system is responsible for delivering the majority of interventions described in the literature (n=41), while the workplace (n=22) and government/regulators (n=26) also play a significant role in leading employment related RTW interventions. Very few interventions described in the literature are led by multiple sectors but quite a few aim to target multiple systems (target systems not shown). Interventions that were led within one system were found to often target multiple other systems, indicating the need for a coordinated multicomponent approach.

*Table 4. Leading system across intervention categories*

| Intervention category | Lead system | | | | | |
|---|---|---|---|---|---|---|
| | Workplace | Healthcare | Personal | Govt/Regulator | Social | Multi |
| **Single component interventions** | | | | | | |
| Workplace accommodation | 4 | 1 | - | 1 | - | 1 |
| Physical therapy | 1 | 7 | - | - | - | - |
| Psychotherapy | 1 | 16 | - | 1 | - | - |
| Education | 1 | 2 | - | 1 | - | - |
| RTW coordination | 1 | 2 | - | 4 | - | - |
| Policy initiatives | - | - | - | 7 | - | - |
| Clinical | - | 4 | - | 1 | - | - |
| **Multicomponent interventions** | | | | | | |
| Employer-led | 2 | - | - | - | - | - |
| Workplace based | 12 | - | - | - | - | 5 |
| Vocational Rehabilitation | - | 9 | - | 11 | - | 2 |

## IMPLICATIONS OF FINDINGS

This evidence review identified that interventions which have been found to be effective for supporting individuals to engage in or return to work are multicomponent and work-focussed.

More specifically, the evidence indicates that:

- Multicomponent **employer-led interventions** are effective for job-attached clients particularly when they include work accommodation.
- Multicomponent **workplace based interventions** are effective for job-attached clients with a range of physical and mental health conditions, particularly when they include work accommodation, targeted healthcare services and coordination.
- **Structured vocational rehabilitation** are effective for job-detached clients with complex conditions, particularly when they include healthcare services and coordination.
- **Policy initiatives** targeting employers and clients are effective for job-attached and job-detached clients but can have low uptake.

Implications of these findings for the TAC in the development of the enterprise-wide Work Strategy are discussed below according to each of the four TAC client groups, differentiated by vocational status 12 months post-accident:

Group 1: job-attached clients at work
Group 2: job-attached clients seeking or planning to RTW
Group 3: job-detached and not seeking or planning to RTW
Group 4: job-detached and unable to RTW.

### *Group 1: Job-attached clients at work*

The TAC have identified that TAC clients who have successfully returned to work 12 months post-accident represent the least complex client group. These clients require minimal intervention to engage in or return to work.

| Objective | Intervention and components | Key stakeholders | Main considerations |
|---|---|---|---|
| Workers stay at work, stay healthy | **Employer led organisational programs** | Employers and workers | More feasible for large employers, small to medium employers may need support |

The evidence indicates that multicomponent employer-led approaches are most appropriate to support this client group to stay at work. Employer-led interventions are likely undertaken within large organisations that have the resources needed for successful program delivery. Large-scale employers may offer work disabled workers, who may also be TAC clients, some form of onsite work disability management. Employer led interventions that are effective include tailored work accommodations such as modifications to workplace design or working hours.

#### *Recommended actions*

- Identify job-attached clients who have returned to work and are receiving ‘stay at work’ support from their employer, to prevent duplication of service delivery.
- Examine the feasibility of engaging with employers for ‘stay at work’ programs in people injured in motor vehicle accidents.

### *Group 2: Job-attached clients seeking or planning RTW*

The TAC have identified that clients in the second group have a low level of complexity and are motivated to engage in or return to work.

| Objective | Intervention and components | Key stakeholders | Main considerations |
|---|---|---|---|
| Clients supported to transition back to work | **Work place based**<br>Work accommodations<br>Physical and Psychotherapy<br>RTW coordination | Employers, workers, healthcare providers, insurers | • Effect of interventions greater if implemented within 12 weeks post-injury<br>• Moderate to high intensity ergonomic content is necessary for impact<br>• Supervisor and co-worker involvement is important<br>• Collaborative planning among stakeholders to implement work accommodations more effective<br>• Work accommodation effective for physical disabilities<br>• Early identification of healthcare needs and early targeted response - focus on what workers are still able to do, and on returning to work as quickly as possible<br>• Work-based CBT improves RTW enabling worker to acquire necessary coping skills to deal with stressors and practice these skills in the workplace<br>Contact between workplace and healthcare provider key |

For this client group the most suitable effective intervention is a multicomponent workplace-based intervention that is targeted to the client's needs, and addresses the major barriers to RTW. Strategies of workplace-based interventions which are effective, when delivered in combination, include work accommodation, work-focussed healthcare and centralised RTW coordination.

The evidence indicates that modifications to working conditions or the workplace environment improves employment outcomes for people with pain and physically disabling conditions. Collaborative planning among stakeholders to identify and implement appropriate accommodations is important.

There is strong evidence for interventions that include work-focussed healthcare which is targeted to client need. Identifying and treating clients' healthcare needs within 4-6 weeks post injury is important. It is also important that health services focus on work activities that clients are able to engage in and on returning to work as soon as possible. This will capitalise on clients' existing motivation and build readiness to RTW. Healthcare providers with vocational expertise are probably best placed to deliver this component.

The evidence shows that multicomponent workplace based interventions will be most effective if implemented within three months of claim lodgement[11], include high intensity ergonomic content for physical health conditions[36] and involve workplace supervisors and co-workers.

To work collaboratively to develop and implement multicomponent workplace based interventions for job-attached clients the following actions will need to be considered.

#### *Recommended actions*

- Develop a model for a multicomponent workplace-based intervention that involves the workplace, healthcare providers and the client, and is centrally coordinated. This model needs to be sufficiently flexible to be tailored to individual client circumstances.

- Examine the incentives and/or programs that the TAC offers to engage employers in RTW programs.

### *Group 3: Job-detached clients not seeking or planning RTW*

The TAC has identified that job-detached clients who are not actively seeking or planning RTW have a moderate degree of complexity, low levels of resilience and motivation, and are vulnerable to secondary mental and/or physical health complications. These clients require intense and long term support to successfully engage in work.

| Objective | Intervention and components | Key stakeholders | Main considerations |
|---|---|---|---|
| Clients supported to engage in work | **Structured vocational rehabilitation**<br>RTW coordination<br>Policy levers - subsidies | Employment services, insurers, healthcare providers, clients | • Multi-domain interventions recommended<br>• Identify RTW expectations early<br>• Interventions that address client motivation may be effective<br>• Centralised coordination and access to multidisciplinary resources |

For this client group the evidence suggests that the most suitable effective intervention is structured vocational rehabilitation. Individual strategies that have been shown to be effective include targeted healthcare, workplace elements and proactive coordination that is focused on work engagement. Multidisciplinary approaches that involve specialist employment services, healthcare providers and potential employers are important for successful work engagement. There is strong evidence that the Individual Placement and Support (IPS) model of vocational rehabilitation is effective. Adherence to a standardised IPS protocol and positive outcomes may depend on delivery by specialist services.

To develop and implement structured vocational rehabilitation programs for job-detached clients with complex health conditions the following actions will need to be considered.

### *Recommended actions*

- Review the TAC vocational rehabilitation model for job-detached clients and ensure it has the features of an effective model (work-focussed healthcare services, access to specialist employment services, service delivery coordination).

### *Group 4: Job-detached clients unable to RTW*

The TAC has identified that clients within this group have the greatest level of complexity, low levels of resilience and motivation to RTW, and are especially vulnerable to secondary complications. These clients require intense, long term support to address the substantial personal, social and health barriers to work engagement.

| Objective | Intervention and components | Key stakeholders | Main considerations |
|---|---|---|---|
| Clients supported to engage in work | **Structured vocational rehabilitation**<br>Psychotherapy | Employment services, insurers, healthcare providers, clients | • Work-focused interviews and support likely to be effective at increasing chance of work engagement<br>• Problem solving therapy effective and could be readily implemented to enable clients to take first steps to RTW<br>• Interventions that address client motivation may be effective |

For these clients the most suitable effective intervention is multicomponent structured vocational rehabilitation that incorporates psychotherapy which is work-focussed and addresses client motivation.

Motivation is a critical component of work readiness and a key personal determinant of successful engagement in and return to work following work disability.[50, 51] Structured vocational rehabilitation approaches that address client motivation may be effective.[1] Motivational interviewing is a collaborative, person-centred psychotherapeutic approach to motivate positive behaviour change.[1] Appendix 6 provides an example of an Individual Placement and Support program enhanced with Motivational Interviewing.

To develop and implement a structured vocational rehabilitation intervention for job-detached TAC clients with significant barriers to work engagement the following actions will need to be considered.

### *Recommended actions*

- Work collaboratively with specialist employment services and psychologists with vocational expertise to increase work ability and capacity. There are some models in place in Australia that the TAC might learn from to design their own program (refer to the related State Analysis report).
- Explore options to engage and partner with disability and human services to deliver coordinated services.
- Consider commissioning a focused review of the use and effectiveness of Motivational Interviewing for job-detached clients where motivation and resilience are identified barriers to work engagement.

### *Limitations*

The effectiveness of different interventions in Australia and the extent to which this differs from other contexts is unclear. This is particularly relevant when considering the effectiveness of government- or regulator-led policy initiatives.

Definitions and levels of descriptive detail of interventions differed across systematic reviews. This made categorisation of broad interventions somewhat challenging. However, we adopted a consensus based team approach to intervention categorisation. The review team included a content expert.

## *CONCLUSION*

There is a strong evidence base in support of multicomponent work-focussed interventions for improving employment outcomes for TAC clients. When considering factors for success in implementing effective interventions for TAC clients to engage in work, communication and stakeholder coordination are critical. Of particular note is the central role employers have in effective work disability interventions.

[1] This meta-review did not identify any systematic reviews of motivational interviewing interventions for work disability. Consideration of motivational interviewing was included here at the TAC's request and as motivation is a significant barrier to return to and engagement in work for a number of TAC clients.

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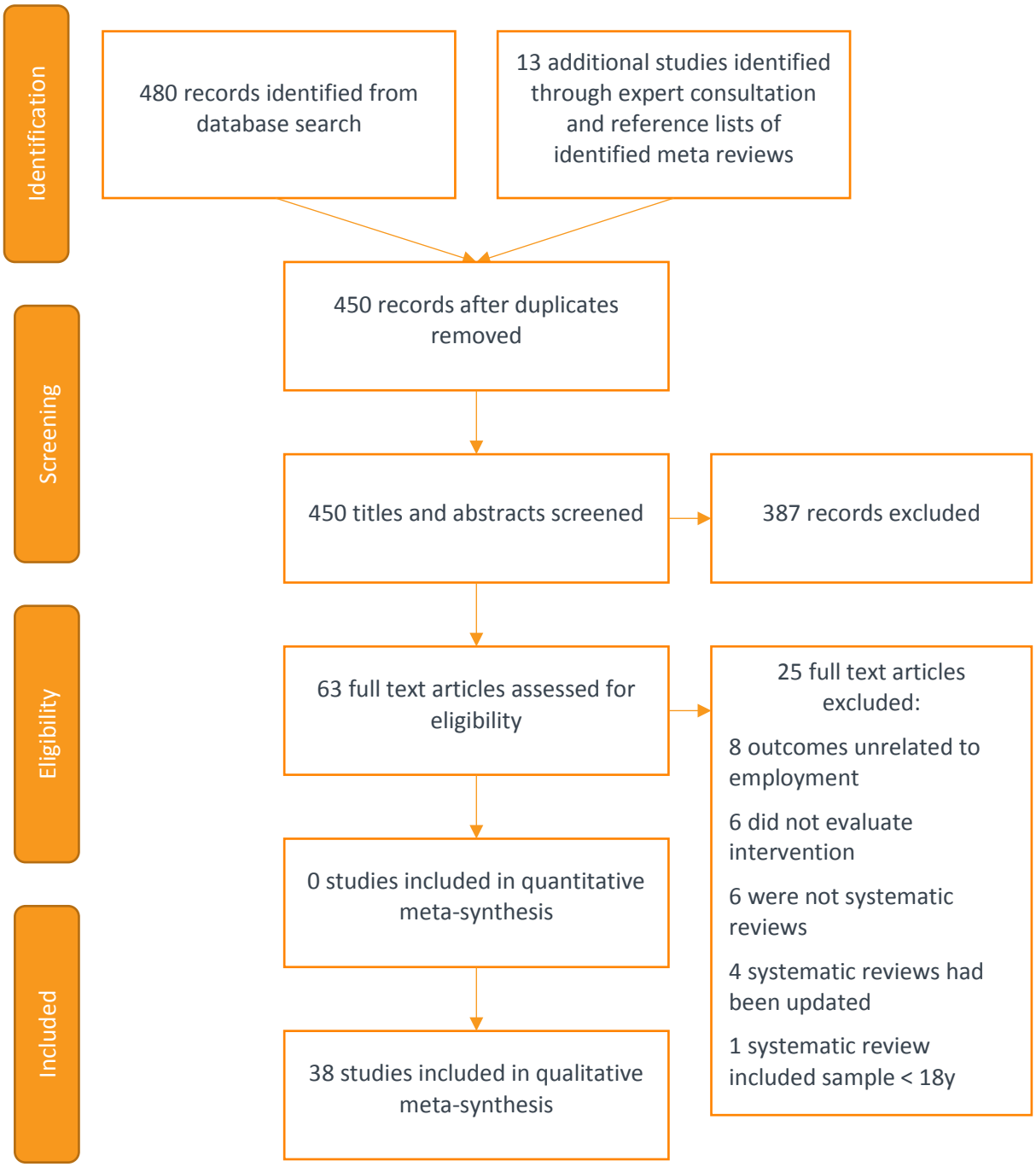
# APPENDICES

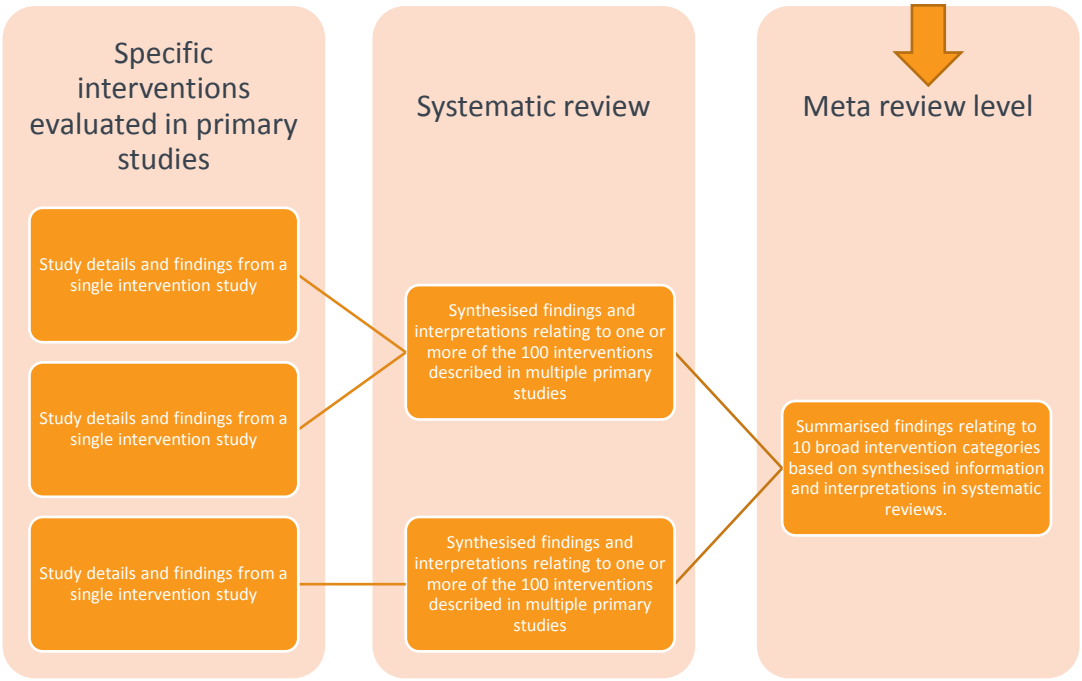
## Appendix 1: PRISMA flow diagram



## *Appendix 2: AMSTAR checklist items*

| | Item |
|---|---|
| 1 | An a priori design was provided. |
| 2 | Duplicate study selection and data extraction conducted. |
| 3 | Comprehensive literature search performed. |
| 4 | Publication status used as inclusion criterion. |
| 5 | List of included and excluded studies provided. |
| 6 | Characteristics of included studies provided. |
| 7 | Scientific quality of included studies assessed and documented. |
| 8 | Scientific quality of included studies used appropriately in formulating conclusions. |
| 9 | Appropriate methods used to combine study findings. |
| 10 | Likelihood of publication bias assessed. |
| 11 | Conflict of interest declared. |

## *Appendix 3: Schema of evidence included in the meta-review*




*Note*. Evidence from the systematic reviews is summarised into broad intervention categories (not resynthesised) as indicated by the arrow.

## *Appendix 4: Methodological quality of systematic reviews and primary studies*

| Reference | Systematic review quality[1] | Quality assessment tool used by review authors | Primary studies' quality determined by review authors |
|---|---|---|---|
| Arends | High | Adapted Cochrane RoB tool | Risk of bias: 7 low, 2 high |
| Baldwin | Medium | Downs and Black checklist | Study quality: 6 low |
| Bambra | Medium | Criteria adapted from policy evaluation literature | Study quality: variable |
| Carroll | Medium | NHS criteria for RCTs, Downs and Black checklist for non-RCTs | Study quality: mostly good |
| Clayton | Medium | Criteria adapted from existing checklists | NR |
| Clayton | Medium | Criteria adapted from existing checklists | NR |
| Cullen | Medium | 25 methodological criteria developed by authors | Study quality: 18 high, 18 medium |
| De Boer | High | Cochrane RoB tool | Risk of bias: 9 low, 6 high |
| De Buck | Medium | NR | NR |
| Dewa | Medium | Cochrane RoB tool | Study quality: 2 excellent, 2 good, 2 weak |
| Dibben | Medium | Quality criteria derived from research methods texts | Study quality: reasonable to quite weak across studies |
| Donker-Cools | Medium | Van Tulder 11-item quality checklist | Study quality: 4 of 5 RCTs high, 5 of 7 Obs? sufficient |
| Franche | Medium | Quality criteria developed by authors | Study quality: 10 high |
| Gaudreault | Medium | Cochrane RoB tool | Risk of bias: 2 high |
| Gensby | High | Cochrane RoB tool | Risk of bias: 12 high |
| Graham | High | Cochrane RoB tool | Risk of bias: moderate |
| Hayday | Medium | NICE checklist | Study quality: 1 medium, 2 low |
| Heffernan | Medium | NICE checklist | Study quality: 1 very high, 1 high, 2 weak, 1 poor |
| Hoefsmit | Low | Effective Public Health Practice project 5-item tool | Study quality: 12 good, 6 moderate |
| Khan | High | Van Tulder (2003) 11-item quality checklist | Study quality: 2 low |
| Hou | Medium | Cochrane RoB tool | NA |
| Kinoshita | High | Cochrane RoB tool | Risk of bias: 15 moderate |
| Nevala | Medium | Van Tulder (2003) 11-item quality checklist | Study quality: 10 high, 1 ? |
| Nieuwenhuijsen | High | Cochrane RoB tool | Risk of bias: 14 high, 9 low |
| Nigatu | Medium | Cochrane RoB tool | Study quality: moderate across studies |
| Norlund | Medium | Swedish Council on Technology Assessment in Healthcare (SBU) standard checklist | Study quality: 4 mod high, 3 limited |

| Reference | Systematic review quality[1] | Quality assessment tool used by review authors | Primary studies' quality determined by review authors |
|---|---|---|---|
| Odeen | Medium | Cochrane RoB tool | Risk of bias: 2 low, 15 medium |
| Palmer | Medium | Adapted Cochrane RoB tool | Median quality: RCTs 45%, non-RCTs 40% |
| Robinson | High | Cochrane RoB tool for RCTs, Downs and Black checklist for non-RCTs | Risk of bias: 6 high |
| Roels | Medium | SIGN algorithm | Study quality: 1 high, 1 moderate, 1 low, 12 very low |
| Schaafsma | Medium | Cochrane Back Review Group 12 criteria | Risk of bias: 9 high, 16 low |
| Schandelmaier | Medium | Adapted Cochrane RoB tool | Risk of bias: 9 high |
| Stergiopoulos | Medium | Modified Lagerveld et al. 13-item checklist | Study quality: 5 good, 2 excellent |
| Tamminga | Medium | MINORS | Study quality: 19 low |
| Trenaman | Low | NR | NR |
| Van Vilsteren | High | Cochrane RoB tool | Risk of bias: 5 high, 6 low, 3 unclear |
| Varatharajan | Medium | SIGN criteria | Risk of bias: 5 low |
| Williams | Low | Evaluation guidelines | Study quality: 8 med-high, 5 medium |

*Note.* [1] Based on AMSTAR rating; MINORS = Methodological Index for Non-Randomised Studies; NICE = National Institute for Clinical Excellence; RoB = Risk of Bias; SIGN = Scotish Intercollegiate Guidelines Network

## *Appendix 5: Systematic review characteristics*

| Author (year) Country | N databases searched (searched date range) | Inclusion criteria | Exclusion criteria | N included studies (date range) N participants | Target population | Intervention(s) evaluated |
|---|---|---|---|---|---|---|
| Arends (2012) The Netherlands | 5 (- 2011) | Population workers with adjustment disorder; RTW-focused intervention | Severe psychological disorders | 9 (2003-2011) 1546 | Workers with adjustment disorder on sick leave | - Psychotherapy |
| Baldwin (2011) Australia | 5 (-2009) | Population working age stroke survivor participants in a vocational rehabilitation program | Rehabilitation programs that did not address vocation; other diagnostic groups; non-English language papers | 6 (1990-2008) 23-200 in studies | Working age stroke survivors | - Vocational Rehabilitation |
| Bambra (2005) United Kingdom | 17 (-2002) | Population working age persons on disability benefits due to moderate physical or mental health condition | Population learning disabilities; study did not report employment outcomes | 16 (1996-2002) NR | Working age persons with physical/mental health condition | - Policy initiatives<br>- Work accommodation |
| Carroll (2010) United Kingdom | 12 (1990-2010) | Population workers on sick leave >2w; workplace intervention evaluated | Intervention did not include worksite visit or employer contact; population self-employed or unemployed | 9 (1992-2006) NR | Workers on sick leave | - RTW coordination<br>- Physical therapy<br>- Workplace based |
| Clayton (2011) United Kingdom | 16 (2002-2008) | Population working age persons | Interventions outside UK; published prior to 2002; not working age; no chronic illness/disability; no employment, effectiveness, process or organisation-related outcomes reported; cross-sectional or small-scale studies not part of national policy initiative; programmes focused on reducing short-term work absence | 6 (2002-2007) 23-200 across studies | Unemployed persons with chronic illness/disability in receipt of incapacity benefits | - Policy initiatives<br>- Vocational rehabilitation |
| Clayton (2012) Multi-country | 16 (1970-2008) | Population could be in receipt of incapacity benefits | Population Short term sickness absence | 30 (1995-2008) NR | Unemployed persons with chronic illness/disability | - Policy initiatives |
| Cullen (in press) Multi-country | 7 (1990-2015) | NR | Intervention unrelated to workplace; severe TBI, SCI, severe lower limb traumatic injury, MSK secondary to cancer, cancer-related pain, osteoporosis, severe mental disorder population groups; study not focused on RTW or disability support/management; non-intervention studies; interventions not part of a system, program, policy or work practice change | 36 (1990-2015) NR | Workers with MSK, MH and pain related conditions on sick leave | - Education<br>- Physical therapy<br>- RTW coordination<br>- Work accommodation<br>- Workplace based |

| Author (year) Country | N databases searched (searched date range) | Inclusion criteria | Exclusion criteria | N included studies (date range) N participants | Target population | Intervention(s) evaluated |
|---|---|---|---|---|---|---|
| De Boer (2015) the Netherlands | 7 (- 2014) | Population adults employed at time of cancer diagnosis; intervention aimed to enhance RTW; RCT | NR | 15 (1983-2013) 1835 | Adult cancer patients | - Psychotherapy<br>- Physical therapy<br>- Clinical |
| De Buck (2002) Multi-country | 4 (1981-2001) | Vocational rehabilitation intervention for patients with chronic rheumatic disease; employment-related outcome; Dutch, German or English language paper | Review papers | 6 (1981-1997) 52-4.2mil across studies | Patients with chronic rheumatic disease | - Vocational rehabilitation |
| Dewa (2015) Multi-country | 5 (2002-2014) | Intervention included work-focussed problem solving; RTW outcomes | Non-English language papers | 6 (2003-2013) 975 | Workers with MH condition on sick leave | - Workplace based |
| Dibben (2012) United Kingdom | 5 (2005-2011) | Employment-related interventions; employment outcomes | Studies that did not assess intervention effectiveness on employment; populations other than MH, MSDs and cardio-respiratory | 154 (2005-2011) NR | Workers with common health conditions | - Psychotherapy<br>- Physical therapy<br>- Education<br>- Workplace based<br>- Vocational rehabilitation |
| Donker-Cools (2016) the Netherlands | 6 (2000-2015) | Population working age adults in paid employment pre-injury; intervention designed to improve RTW; RTW or work participation outcomes; English, German, French or Dutch language papers | NR | 12 (2000-2014) 2257 | Adults with non-progressive ABI | - Psychotherapy<br>- Workplace based<br>- Vocational rehabilitation |
| Franche (2005) Canada | 7 (1990-2003) | Population off work due to pain or compensation claimant; RTW-focussed intervention provided by workplace, insurer or healthcare provider in consultation with workplace; work disability, QoL and cost outcomes | MH condition, acute pain, malignant condition population groups; clinical intervention delivered without workplace integration; non-comparative study | 10 (1993-2003) 58405 | Workers with MSK or other pain condition on sick leave | - Workplace based |
| Gaudreault (2014) Canada | 8 (2001-2007) | Population working age with symptomatic or radiologic knee OA who had not undergone joint replacement surgery; work disability outcome; English or French language papers | Interventions not specific to knee OA population group; descriptive studies or editorial commentaries | 2 (2001-2007) 16376 | Workers with knee OA | - Vocational rehabilitation |

| Author (year) Country | N databases searched (searched date range) | Inclusion criteria | Exclusion criteria | N included studies (date range) N participants | Target population | Intervention(s) evaluated |
|---|---|---|---|---|---|---|
| Gensby (2014) Denmark | 12 (1948-2010) | Workplace disability management or RTW intervention; RTW, duration of sick leave or reduction in lost days from work outcomes | Intervention comprised system- or clinical-based DM or RTW programs | 12 (1987-2006) 55798 | Workers with physical injury, MH condition or other illness on sick leave | - Employer led |
| Graham (2016) America | 16 (1973-2015) | Population aged 18-65y with non-penetrating TBI employed pre-injury and unemployed/on sick leave at intervention commencement; employment primary outcome; RCT | NR | 3 (2000-2015) 220 | Working age adults with TBI on sick leave or unemployed | - Vocational rehabilitation |
| Hayday (2008) United Kingdom | 19 (1990-2008) | Population adults > 16y unemployed due to long-term incapacity and in receipt of incapacity benefits; UK setting; intervention comprised programme, policy and/or strategies to assist adults on benefits RTW or prepare for work; employment-related outcome | Population included workers; intervention delivered without workplace or primary care involvement; pharmacological intervention; study did not address RTW outcome; non-English language papers | 3 (2007) 29491 | Unemployed persons in the United Kingdom in receipt of incapacity-related benefits | - Psychotherapy<br>- Vocational rehabilitation |
| Heffernan (2011) United Kingdom | 6 (2000-2011) | Population significant MH condition; study examined effectiveness of IPS; UK setting; gainful employment outcome; study published in NHS Library for Health | Review papers; intervention comprised non-IPS methods of supported employment | 5 (2004-2010) 961[1] | Persons with significant MH condition | - Vocational rehabilitation |
| Hoefsmit (2012) the Netherlands | 4 (1994-2010) | Population on sick leave; RTW outcome; English language papers; primary empirical or systematic review studies | NR | 23 (1997-2010) NR | Workers on sick leave | - Workplace based |
| Khan (2011) Australia | 7 (1966-2011) | Vocational rehabilitation with clearly defined work therapy element; competitive/supported employment rate outcome | NR | 2 (1996-1997) 80 | Working age persons with MS | - Vocational rehabilitation |
| Hou (2013) Taiwan | 6 (-2012) | Any intervention to enhance RTW | Population > 3m since upper limb injury; cumulative trauma disorders or repetitive strain injuries | 0 (-) 0 | Working age persons who sustained a traumatic upper limb injury | - Vocational rehabilitation |
| Kinoshita (2013) Japan | 1 (-2010) | Population majority working age currently unemployed; severe MH condition | Learning disability sole diagnosis | 15 (1996-2010) 2265 | Unemployed working age persons with severe MH condition | - Vocational rehabilitation |

| Author (year) Country | N databases searched (searched date range) | Inclusion criteria | Exclusion criteria | N included studies (date range) N participants | Target population | Intervention(s) evaluated |
|---|---|---|---|---|---|---|
| Nevala (2015) Finland | 10 (1990-2012) | Population aged 16-68y with permanent disability; quantitative or qualitative primary studies; employment outcome | NR | 11 (2000-2013) 1060 | Working age persons with permanent disability | - Work accommodation |
| Nieuwenhuijsen (2014) the Netherlands | 5 (2006-2014) | Population adult workers with depressive disorder; intervention aimed to reduce work disability | Primary diagnosis other than depressive disorder; depressive disorder with psychotic features | 23 (3 studies < 2000, 7 studies 2000-2005, 13 studies > 2005) 6278 | Workers with depressive disorder | - Psychotherapy |
| Nigatu (2016) Canada | 6 (1995-2016) | Population workers > 18y on sick leave due to common MH condition; work-focused or clinical intervention with RTW aim | NR | 11 (2006-2015) 3345 | Workers with common MH condition on sick leave | - Psychotherapy |
| Norlund (2009) Sweden | 1 (1998-2006) | Population aged 19-64y; multidisciplinary interventions involving at least 2 healthcare disciplines; English-language papers | Low back pain caused by specific pathologies or conditions; primary studies reported >30% drop out rate | 7 (1998-2005) 1450 | Workers with chronic low back pain on sick leave | - Clinical |
| Odeen (2013) Norway | 5 (-2011) | RCT; an intervention component delivered at workplace or initiated by employer; English language papers | Recruitment from clinical settings or economic claims databases; qualitative studies; study reported estimates of future sick leave | 17 (1992-2011) unclear | Workers aged >18y | - Psychotherapy<br>- Physical therapy<br>- Education<br>- Workplace based |
| Palmer (2012) United Kingdom | 2 (1990-2010) | Intervention delivered in primary care or workplace setting; quantifiable employment outcomes | Intervention comprised pharmaceutical trials or surgery; external traumatic injury population group | 42 (1990-2010) median 107 per study | Workers with MSD | - Work accommodation<br>- Psychotherapy<br>- Physical therapy<br>- RTW coordination |
| Robinson (2015) Multi-country | 6 (1981-2014) | Population employed or unemployed HIV+; intervention aimed at sustaining or achieving employment | NR | 6 (2011-2013) 48232 | Persons aged > 16y with positive HIV status | - Clinical<br>- Vocational rehabilitation |
| Roels (2016) the Netherlands | 6 (-2016) | Population >16y with SCI; English language papers | Population with active untreated AOD misuse; mental impairment affecting safety | 15 (1966-2014) 2053 | Persons aged > 16y with SCI | - Vocational rehabilitation |

| Author (year) Country | N databases searched (searched date range) | Inclusion criteria | Exclusion criteria | N included studies (date range) N participants | Target population | Intervention(s) evaluated |
|---|---|---|---|---|---|---|
| Schaafsma (2013) the Netherlands | 6 (1980-2012) | Population at least 50% with back pain; intervention comprised physical conditioning program; work outcomes | Population unemployed or with specific diagnoses; study designs other than RCTs | 25 (1992-2011) < 100 to > 200 across studies | Persons > 16y with work disability-related back pain | - Physical therapy |
| Schandelmaier (2012) Multi-country | 5 (-2012) | Population at least 80% on sick leave >4w and randomly allocated to intervention or usual care; disability status or RTW outcome | Employer-initiated RTW programs | 9 (1994-2010) 3422 | Workers on sick leave | - RTW coordination |
| Stergiopoulos (2011) Canada | 4 (NR) | Population PTSD clinical diagnosis; PTSD acquired in work context; work outcomes; English or French language papers | Intervention targeted MH condition other than PTSD; secondary traumatic stress diagnosis | 6 (1989-2008) 192 | Workers with work-related PTSD | - Psychotherapy |
| Tamminga (2010) the Netherlands | 4 (- 2008) | Population cancer patients who received diagnosed >18y; intervention aim was RTW, employment or work retention | Interventions focussed on improving body function or structure | 19 (1980-2008) 5877 | Adult cancer patients | - Psychotherapy |
| Trenaman (2014) Canada | 7 (- 2014) | Population persons with SCI aged 18y+; employment outcomes | Review papers; non-English language papers; non-peer reviewed studies | 14 (1982-2012) 15832 | Persons with SCI | - Psychotherapy<br>- RTW coordination<br>- Clinical<br>- Vocational rehabilitation |
| Van Vilsteren (2015) the Netherlands | 5 (- 2015) | Intervention linked to workplace that included work changes and stakeholder involvement | Interventions not involving changes to or involvement of workplace in RTW, designed to prevent sick leave, where main goal was not RTW, group-based delivery or focussed on ergonomic or posture modification education | 14 (1997-2013) 2058 | Adult workers on sick leave | - Work accommodation |
| Varatharajan (2014) Canada | 9 (1990-2012) | Population aged 18y+ with neck pain and WAD and/or upper extremity disorders; WAD intervention; RCT, cohort or case-control design; baseline sample size at least 30 per group for RCT and 100 per group for cohort studies; English language papers | Pain or disorder related to major pathology; non-empirical papers; non-comparative study designs; cadaveric or animal study | 5 (2003-2011) 958 | Adults with neck pain and associated disorders | - Employer led |

| Author (year) Country | N databases searched (searched date range) | Inclusion criteria | Exclusion criteria | N included studies (date range) N participants | Target population | Intervention(s) evaluated |
|---|---|---|---|---|---|---|
| Williams (2007) Canada | 4 (1982-2005) | Secondary prevention focussed intervention delivered in the workplace; prospective or cross-sectional design; English language papers | Case studies; retrospective study design; unpublished material | 10 studies in 15 papers (1991-2004) 2489 | Workers with MSK LBP injuries | - Workplace based |

*Notes*. [1] Sample N not reported in one primary study; ABI = Aquired Brain Injury; DM = disability management; IPS = Individual Placement and Support; MH = Mental Health; MS = Multiple Sclerosis; MSK = Musculoskeletal; MSD = Musculoskeletal Disorder; NR = Not Reported; OA = Osteoarthritis; PTSD = Post-Traumatic Stress Disorder; RCT = Randomised Control Trial; RTW = Return to Work; SCI = Spinal Cord Injury; TBI = Traumatic Brain Injury; UK = United Kingdom.

## *Appendix 6: An evidence based vocational rehabilitation intervention*

### *Individual Placement and Support enhanced with Motivational Interviewing: an evidence based vocational rehabilitation intervention*

An American mental health agency developed a model of IPS enhanced with motivational interviewing to increase motivation to engage in work.[52]

Employment specialists trained in the enhanced IPS model delivered the intervention to work detached individuals with severe mental health conditions. A key feature of this program was the ongoing assessment of participants' level of motivation to engage in work. Intervention delivery was tailored accordingly. Individuals with a low level of motivation were provided with motivational interviewing to increase work readiness. As motivation and work readiness increased, program delivery focussed on IPS components.

Specific motivational interviewing components included:

- Identifying and resolving ambivalence around work engagement;
- Active listening and expression of empathy; and
- Building self-efficacy.

Specific IPS components included:

- Rapid job search for competitive employment;
- Integrated vocational rehabilitation and psychotherapy;
- Personal job choice; and
- Ongoing and unlimited support.

One evaluation study reported that participation in the enhanced IPS program was associated with positive employment outcomes over six months. Participants reported obtaining a greater number of jobs and a higher income compared to before entering the program.[52]