Work Wellness Institute
L'institut de bien-être au travail

Technical Report

Planning, Implementing and Evaluating Successful Workplace Interventions for Psychologically Healthy and Productive Workplaces: A Pattern Analysis of 57 Systematic Reviews

White, M.I., Williams-Whitt. K., Wagner, S.L., Schultz, I.Z., Dionne, C.E., Pomaki. G., Loughlin, C., Tjulin, Å., Runte, M., Gilbert, M., Nellutla, M., Szymanski, T., Horvath, S., Brown, L., Hansen, N., During, D., Sprague, S., Riml, S., Nagy, L., Skeath, K., Spinks, N. (2020). Planning, Implementing and Evaluating Successful Workplace Interventions for Psychologically Healthy and Productive Workplaces: A Pattern Analysis of 57 Systematic Reviews. Published by Work Wellness and Disability Prevention Institute, Vancouver, BC. ISBN: 978-1-988875-02-6 Available at: https://workwellnessinstitute.org/research/978-1-988875-02-6

Funded Project: Identification, Control and Prevention of Work-related Psychosocial Hazards and Social Conditions Contributing to Mental Health Disorders and Prolonged Work Absence

WorkSafeBC Project reference: RS2014-IG19, Focus on Tomorrow – Competitive Grant

This work was supported by competitive grant funding from WorkSafeBC through the Innovation at Work program and Mitacs through the Mitacs Accelerate program. This report has been modified from the Final Report Submitted to WorkSafeBC. We have changed the report name and added a Forward section to this version.

Principal Investigator: Marc White PhD, Clinical Assistant Professor, Department of Family Practice, University of British Columbia; Past CEO and President, Work Wellness and Disability Prevention Institute, Vancouver, BC Canada.

Please cite as:

White, M.I., Williams-Whitt. K., Wagner, S.L., Schultz, I.Z., Dionne, C.E., Pomaki. G., Loughlin, C., Tjulin, Å., Runte, M., Gilbert, M., Nellutla, M., Szymanski, T., Horvath, S., Brown, L., Hansen, N., During, D., Sprague, S., Riml, S., Nagy, L., Skeath, K., Spinks, N. (2020) Planning, Implementing and Evaluating Successful Workplace Interventions for Psychologically Healthy and Productive Workplaces: A Pattern Analysis of 57 Systematic Reviews. Published by Work Wellness and Disability Prevention Institute, Vancouver, BC. ISBN: 978-1-988875-02-6 Available at: https://workwellnessinstitute.org/research/978-1-988875-02-6

Acknowledgement

Thank you to research assistants and volunteers participating in this project: Ria Nishikawara, Jennilyn Chan, Khristine Carino, Rebecca Gibbons, Madeline Doucette, Juliet McEwen, Nicole White.

Published by Work Wellness and Disability Prevention Institute,
https://workwellnessinstitute.org/research/978-1-988875-02-6

April 20, 2020

PARTICIPANTS AND ACKNOWLEDGEMENTS

Academic Community Partnership

Researchers

Marc White PhD, Clinical Assistant Professor in Family Practice (UBC), CEO, Work Wellness and Disability Prevention Institute

Kelly Williams-Whitt MBA PhD, Human Resources and Labour Relations, Dhillon School of Business, University of Lethbridge

Shannon Wagner MSc, PhD, RPsych, Professor, School of Health Sciences, Interim Dean, College of Arts, Social and Health Sciences, University of Northern British Columbia

Izabela Schultz PhD, Professor, Rehabilitation Counseling Psychology, Department of Educational and Counseling Psychology and Special Education, University of British Columbia

Clermont Dionne PhD, Professor, Department of Rehabilitation, Faculty of Medicine, Laval University. Senior investigator, Population Health Research Unit (URESP), Research Centre of the Laval University Affiliated Hospital

Georgia Pomaki PhD, Instructor, Pacific Coast University for Workplace Health Sciences Manager, Mental Health Specialists, Wellness, Disability & Life, Manulife Financial

Catherine Loughlin PhD, Canada Research Chair in Management and member of the CN Centre for Occupational Health & Safety

Åsa Tjulin, MPH, PhD Rehabilitation and Working Life, Department of Health Sciences, Mid Sweden University

Mary Runte PhD, Associate Professor, Policy and Strategy, Faculty of Management, University of Lethbridge

Merv Gilbert PhD, RPsych, Adjunct Professor with the Centre for Applied Research in Mental Health and Addiction, Simon Fraser University, and Principal Partner, Psych Health + Safety

OHS Sectors

Manu Nellutla, The Manufacturing Safety Alliance of BC

Steve Horvath, CEO, Radiation Safety Institute of Canada

Lynda Brown, Canadian Centre for Occupational Health and Safety,

Kiran Kapoor, Workplace Safety & Prevention Services (ON),

Labour

Nina Hansen, BC Federation of Labour

David Durning, Health Sciences Association of BC (retired)

Terri Szymanski, Ontario Public Service Employees Union

Practitioners

Stacey Sprague PhD, Vancouver Coastal Health Employee and Family Assistance Program

Simone Riml, Manager, Workplace Wellness & Client Relations, Vancouver Coastal Health

Louise Nagy, National Director of Environment Health and Safety – LifeLabs

Kim Skeath, Former Manager of Workplace Health and Wellness – Seaspan ULC

Research Assistants

Ria Nishikawara

Jennilyn Chan

Khristine Carino

Rebecca Gibbons

Research Volunteers

Madeline Doucette
Juliet McEwen
Nicole White

Project KT collaborators

Nora Spinks CEO Vanier Institute of Family

CONTENTS

FORWARD

This report was modified slightly from the original report submitted to WorkSafeBC. We have altered the name of the report and have added this forward section.

The goal of the proposed framework for creating successful workplace interventions is to help organizations use a more evidence-informed approach to identifying, controlling and preventing psychosocial hazards and social conditions that impact employee health and other business outcomes.

The research literature investigating successes and failures of workplace interventions to address psychosocial hazards and social conditions in the workplace is very diverse, and lacks a common set of outcome measures and instruments.

Given these limitations, we used a best evidence, pattern analysis approach that describes the quality, quantity, and consistency of findings across studies. In the report we have noted that most experimental studies in the workplace are pre- and post-design. From a methodological perspective most studies included in this report would be considered low quality primary studies. There were some systematic reviews that included primary studies that were randomized controlled trials, or other higher quality experimental designs with controls. In our research summaries we have noted strengths and weaknesses of primary studies informing our chapter conclusions. In some cases, we noted that it was not possible to comment on the quality of the primary studies, and could only report on the quantity and consistency of the outcomes. To better inform our recommendations we also took note of deficiencies of primary studies discussed in the higher quality systematic reviews.

We have also considered the likelihood of negative effects, and weighed the potential value of making recommendations based on limited evidentiary support versus not making a recommendation. We therefore suggest that readers utilize these recommendations carefully and monitor to evaluate their impact in the planning, implementation and post-implementation phases. We also invite readers to review the Limitations section of this report.

SHORT ABSTRACT

Mental health in the workplace is a key topic in British Columbia, across Canada and internationally with a growing focus on the importance of creating and sustaining safe, healthy, productive and inclusive workplaces. This stakeholder-centred best evidence-based synthesis of systematic reviews searched Medline, Embase, Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effectiveness, CINAHL, PsycINFO, TRIP, REHABDATA (NARIC), REHAB+ (McMaster), and Health-evidence.ca (McMaster) published between January 1, 2000 and February 2016 to identify interventions that addressed: mental health symptomatology (depression, anxiety, PTSD, etc.), job control, job demands, social support, stress management, and wellness (health promotion). Following deduplication 5,646 citations were reviewed by two or more independent reviewers. Following title and abstract review, 168 full text articles were reviewed against inclusion/exclusion criteria, resulting in 57 systematic reviews being included. Based on findings and trend analysis, the academic-stakeholder team proposed a framework for planning, implementing and evaluating interventions to mitigate psychosocial hazards in the workplace. Due to low quality evidence and experimental pre and post design of many studies recommendations should be considered with some caution noting the need for more rigorous monitoring of their implementation.

BACKGROUND

Mental health in the workplace has become a key topic in British Columbia, across Canada and internationally with a growing focus on the importance of creating and sustaining safe, healthy, productive and inclusive workplaces. Recently several workers compensation boards have recognized the need to ensure workplaces address significant workplace psychological stressors contributing to prolonged work absence. This is evidenced by more stringent legislative and regulatory requirements including The Workers Compensation Amendment Act, 2011 "Bill 14" in British Columbia.

Greater awareness of the importance of mental health in the workplace has increased the interest of public and private sectors employers and workers to become more knowledgeable about workplace mental health, and to establish policies and procedures that are congruent with best-evidence.

Despite growing interest, and regulation to address mental health in the workplace, stakeholders report that they feel unsure about how, when, and what types of occupational mental health interventions are necessary. Furthermore, employers and organizations face ever increasing financial pressure that often requires clear financial benefit in order to justify expenditure on occupational mental health interventions.

This is the third in a series of stakeholder-centred best evidence syntheses.

- The first synthesis was to better understand risk factors that contribute prolonged work absence across diseases and working populations.
- The second synthesis was to identify interventions that address these risk factors.
- The focus of this third synthesis is to identify and evaluate workplace-based interventions that prevent or mitigate work-related psychosocial hazards that contribute to mental health disorders and prolonged work absence.

Each synthesis contributes by collating and summarizing a body of knowledge about the complex relationships between work and health. They also support the message that "good work" can contribute to good health, and that other workplace factors can contribute to ill-health and premature death.

The underlying goal of this series of three syntheses is to learn from current research about creating and sustaining safe, healthy, productive and inclusive workplaces. Workplaces where people with injuries, chronic or episodic health conditions want to return to work, and where companies want to harness and retain the talent and experience of a diverse workforce.

Cumulative learning

To place our current findings in context we will briefly recap what we learned from our prior best evidence syntheses related to workplace factors that contribute to prolonged work absence.

Synthesis 1. Workplace risk factors contributing to prolonged work absence across health conditions

In our first syntheses of 37 systematic reviews[1, 2] we found strong evidence that lack of social support, increased physical demands at work, increased psychological demands, and lack of supervisory support are predictive risk factors across various types of illnesses or/injuries. Job strain is a predictor specifically for psychosocial, stress, and cardiovascular issues. Lack of job control is predictive for individuals with psychosocial or psychological health issues and low back pain. Similarly, job satisfaction is a predictor primarily for mild illness or injury, psychosocial health, and back and neck pain. We also found moderate evidence across a wide variety of injuries and/or illnesses that poor leadership quality is a predictive risk factors for work absence. Lack of fairness was demonstrated only for individuals with psychosocial health concerns and individuals with mild illness or injury. Lack of managerial involvement was demonstrated only for individuals with mild illness or injury and spinal cord injury.

Synthesis 2. Interventions that address risk factors contributing to work absence across health conditions

In our second synthesis of 46 systematic reviews[3-6] we found consistent evidence that offers of work accommodation and contact between healthcare providers and the workplace reduce work disability duration. We found moderate evidence that work disability duration can be reduced through early contact with the worker, and the participation of a return to work coordinator. For workers with back pain, we found that interventions where stakeholders worked together are more effective at assisting employees to return to work. In addition to reduction of work disability duration, there was moderate evidence that the considered interventions lead to reduced disability costs. There was moderate evidence that increased job control reduces sick leave and absenteeism among general workers. There was moderate evidence that increased job control enhances work productivity and performance. We found strong evidence that reducing job demands for disabled workers with musculoskeletal pain facilitates return-to-work (RTW), and positively impacts sick leave, work productivity and financial outcomes.

Both simple and complex interventions appear to be effective ways to improve attendance. The effects of reducing job demands for general workers (those not already on disability leave) are less clear. We found moderate evidence that work modifications have a positive impact on sick leave or RTW for this population. In general, evidence for the effects of policy and culture interventions were moderate to strong and suggest that complex, multimodal worksite health promotion programs can have a positive effect on absenteeism, performance and financial outcomes. The evidence was stronger for the effects on general workers than off-work workers. The impact of simple interventions depends on the nature of each intervention. We found moderate evidence that mental health interventions have a positive impact on workplace outcomes, especially if these interventions include mental and physical health in combination, multicomponent psychosocial interventions, in-vivo anxiety treatment, high-intensity interventions, access to clinical treatment, or support for disability management navigation.

Synthesis 3. Identification, control and prevention of work-related psychosocial hazards and social conditions contributing to mental health disorders and prolonged work absence.

In this third synthesis our goal is to update our prior intervention synthesis with a specific focus on interventions that address high priority risk factors to better identify, control and prevent work-related psychosocial hazards and social conditions that are detrimental to both employee health and business success.

An important aim of this study was to compare and contrast evidence-informed workplace interventions that can mitigate psychosocial risk factors that contribute to mental health disorders and prolonged work absence.

We defined workplace interventions, as those interventions that primarily occurred at the workplace, with a focus on changes in the workplace, including work design, work organization, and work conditions.

Original Aims and Objectives of the Project

- To identify high priority information needs of participating stakeholders for the identification, control and prevention of work-related psychosocial hazards and improved social support.
- To define and conduct a search strategy to address high priority psychosocial hazards relevant to participating stakeholders.
- To compare and contrast implementation characteristics, and to identify effective intervention components and instruments used in successful interventions assessed by high quality primary studies from our past best evidence-synthesis on workplace interventions.
- To create stakeholder-specific implementation resource guides and tools to identify, control and prevent work-related psychosocial hazards and improve social support.
- To observe, document and explicate working assumptions underpinning the translation process of the same core evidence across different audiences (e.g. human resources personnel, occupational health and safety, claims managers, supervisors, health professionals) to support a more evidence-informed and consistent approach to disability prevention and management.
- To actively disseminate these resources including an evaluation framework to support future research.
- To continue to populate the Health and Work Productivity Portal (HWP) with a core body of evidence-based knowledge, tools and resources reviewed by academic and community stakeholders involved in the web-portal project.

Stakeholder Centred Activities

Stakeholders were involved in the full research cycle for this synthesis. They were considered active participants members of the research team and were involved in meetings with stakeholders and academics. Through a series of seven meetings and a review of 18 different workplace factors, four workplace factors received the highest weighted scores from respondents:

- organizational culture
- job demands
- job control
- workplace social support (supervisor and organizational context)

From a mental health perspective, stakeholders identified high priority mental health conditions:

- depression
- anxiety
- stress
- substance use disorders
- bipolar disorder

Stakeholders also expressed strong interest in learning more about the impact of wellness and health promotion activities on mental health, and what types of interventions were effective.

Stakeholders were interested in learning whether there were specific interventions that addressed:

- Co-worker training
- Early Intervention
- Employee interpersonal conflict
- Incivility and bullying
- Mental health stigma
- Non-workplace social support
- Stay at Work
- Supervisory quality
- Work-Life Balance
- Workplace-based Cognitive Behavioural Therapy

Following consultation with stakeholders and members of the academic team to address feasibility we agreed to focus the systematic review on the following high priority risk factors and interventions. The first five risk factors had the strongest body of literature and evidence arising from our earlier work. Wellness was a priority interest of labour representatives on our academic-stakeholder team.

- Job Control
- Job Demands
- Social Support
- Mental Health Symptomatology (depression, anxiety, PTSD, etc.)
- Stress Management
- Wellness - Health Promotion (excluding Stress Management)

METHODS

Participatory Approach: The project used a robust multimodal participatory approach that has been developed and refined in our previous stakeholder-centred meta-systematic reviews as part of our academic community partnerships (ACP). The collaborative process based on the PRECEDE-PROCEED Model[7, 8] engages academic/stakeholders in a systematic approach of problem identification, problem clarification and problem resolution informed by research evidence.

Best evidence synthesis: Best-evidence synthesis was chosen to be our main method of critical appraisal and instrument/toolkit development. Typically, literature in this area is heterogeneous which precludes a more quantitative approach. Best-evidence synthesis bases analysis on three aspect of evaluation: quality, quantity and consistency of available evidence.[9-11] The synthesis process weighs and reports levels of evidence, and integrates the findings into a program logic model and plan of action. The final synthesis process may include a consensus opinion of the ACP team where there is emerging evidence to guide program implementation. The toolkit will include a proposed framework for evaluating intervention effectiveness. A draft Resource Guide and Toolkit will be distributed to project collaborators for their input/feedback and potential interest in further dissemination.

Inclusion criteria: Our literature search included systematic reviews, meta-analyses and other high-level evidence-based reviews. The participants in the reviewed studies had to be working adults (or on leave due to disability). Interventions must have primarily occurred at the workplace and engaged worksite staff beyond the worker themselves and be focused on one or more risk factor of interest. Reviews could be from any jurisdiction but had to be written in English. Outcomes must have addressed work absence, work productivity or financial impacts in addition to at least one of the defined psychosocial risk factors.

Following discussions with stakeholders, keywords were identified by the ACP team and compared with the prior intervention search strategy. A pilot test was done to identify possible gaps. All search strategies were originally written by an information specialist and were reviewed by one or more peers. There were overlapping years between the prior intervention study and current search and the old and new search results were merged.

We searched electronic databases including Medline, Embase, Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effectiveness, CINAHL, PsycINFO, TRIP, REHABDATA (NARIC), REHAB+ (McMaster), and Health-evidence.ca (McMaster). The search was limited to articles published between January 1, 2000 and the dates the searches occurred (between February 1, 2016 and February 11, 2016 – see Appendix on search results). A cut-off date of 2000 was used, recognizing potential impact of changes to workplace regulations, policies and supports and that the included systematic reviews will address earlier literature. Only the most recent review was accepted if the systematic review was a formal update by predominately the same group of authors (see PICO statement in Appendices).

Search results were uploaded to RefWorks. Duplicate articles were manually removed, with retention of the Medline articles, if they were published in more than one database.

Independent peer review: Titles were independently reviewed by a researcher and two research assistants. Titles were removed if they were clearly not systematic reviews (e.g. clinical pharmaceutical study), addressed clinical interventions (e.g. clinical management of blood disorders), or did not address work populations (e.g. clinical trials on specific health conditions). In the first round of title review only titles were eliminated only where there was agreement among all three reviewers. In the second round two researchers reviewed the remaining titles. Disagreements at the title review level automatically pushed the study into the "abstract review".

Each abstract was then reviewed by two researchers. Any disagreements between paired independent researchers were pushed to "full article review". Checklists were created to facilitate a systematic review at the abstract and full paper level (see appendices).

Each systematic review was assigned a methodological quality rating (see Appendix III). The methodological screening tool selected is the same one used in our prior reviews to maintain consistency. It is a screening tool developed by McMaster University for rating the quality of systematic reviews for public health nurses (see https://www.healthevidence.org/documents/our-appraisal-tools/relevance-tool-and-dictionary-en.pdf). The rating of systematic reviews does not infer the strength of evidence of the findings. The quality rating of a systematic review reflects how appropriately authors identified primary studies for inclusion, how well they report on the quality of the primary studies, and their level of confidence in overall findings and conclusions. It should be noted that while this is useful for determining the comprehensiveness and accuracy of the systematic reviews, it is not an indication of the quantity or quality of evidence available. Thus, a high-quality review may only have found and reported on low quality primary studies. We rely on the number of individual studies extracted from the reviews and consistency of evidence from those studies to provide an indication of the level of evidence. We do not separately assess the methodological quality of individual studies, so we do not offer comment on quality. However, only studies with experimental, quasi-experimental or longitudinal designs were included. Not all studies included control groups or randomized assignment to intervention/control groups. However, all studies included measures that were compared before and after the interventions were implemented. Correlation only studies were excluded.

Data was then abstracted from the papers that made it to the full review stage. Data was abstracted by researchers and trained research assistants. A draft data abstraction table was reviewed by the ACP team to ensure the data abstraction would capture data relevant to stakeholders.

Individual studies from each systematic review that met our inclusion criteria were identified, and their results recorded in the abstraction table. We recorded the number of studies with interventions affecting each psychosocial factor (job control, job demands, social support, stress, mental health, and wellness). The impact of each intervention was recorded as positive, negative or no effect for each outcome of interest (absenteeism, cost and productivity). Studies were recorded under all relevant psychosocial factors to which the intervention applied. Many interventions were multi-component interventions and therefore impact more than one psychosocial factor. Therefore, the same study could, for example, be recorded under job control as well as social support if the intervention could affect either of the two risk factors.

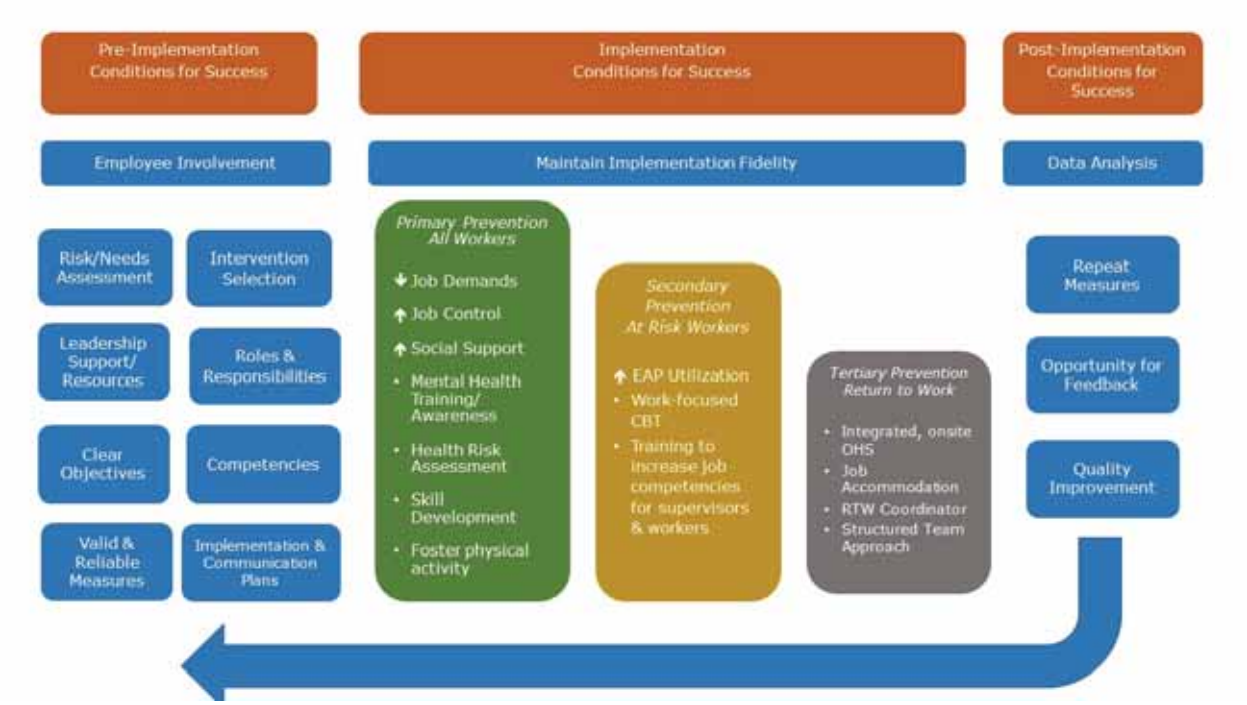
If an individual study was included in more than one systematic review, it was recorded under the

first review and eliminated (where possible) from the reporting of subsequent reviews. This was intended to minimize the potential of overstating the quantity or consistency of findings by including the same primary study results multiple times. In some reviews it was not possible to identify the outcomes associated with individual studies, so there may be some repetition.

KEY RECOMMENDATIONS

We analyzed 57 systematic reviews. Based on the findings, analysis and reflection we are proposing a framework (see Figure 1) for creating successful interventions that identify, control and prevent work-related psychosocial hazards and social conditions contributing to mental health disorders and prolonged work absence. A discussion of key recommendations follows.

Figure 1. Proposed Framework for Successful Interventions



PRE-IMPLEMENTATION:

1. Risk / Needs Assessment

a. Gather administrative and historical data

Before making changes to your policies and practices, establish baseline information to identify organizational needs and to evaluate program outcomes. Identify and collect available data on your current baseline, including:

i. Workers' compensation claims and their status (frequency, recurrent, type)
ii. Injury rates
iii. Comparative industry sector data. (WCB benchmarks, KPI's)
iv. Absence rates by department, location or work unit
v. Turnover rates
vi. Employee Assistance Program utilization rates
vii. Organizational culture perceptions (e.g. engagement, job satisfaction, etc.)

We recommend organizations maintain records of historical administrative data for three years or more, collected in quarterly intervals.

b. Conduct psychosocial risk assessments

i. We strongly recommend the use of validated surveys to measure psychosocial risk factors, as use of such surveys will substantially improve quality of program evaluation necessary to identify risk and target intervention.

ii. Use of a third-party or academic centre to assist with the collection of sensitive data, including data about organizational culture is appropriate.

Identify and refresh programs targeting the known risks, that address the interests and needs of your employees.

c. Use participatory approaches to identify, clarify and recommend workplace changes

Among the most cost-effective methods for creating positive workplace change are participatory approaches to problem identification, clarification and resolution, such as labour-management partnerships or quality circles. These approaches are commonly used to address occupational health and safety issues, improvements in work processes, and more recently have been used to specifically address psychosocial issues in the workplace.

i. We suggest participatory teams prioritize recommendations and work together in planning, implementing and evaluating the actionable programs.

d. Leadership Support/Resources

Leadership must be engaged, supportive and willing to implement and invest in evaluation to monitor results. Successful implementation typically requires a comprehensive plan with clear objectives, articulated roles and responsibilities, assessment of competencies needed and training, if necessary, and a communication plan that fosters two-way communication. External consultation typically is needed to inform the utilization of valid and reliable measures and provide input on evidence-informed interventions selection.

IMPLEMENTATION:

1. Primary Prevention All Workers

a. Job Demands / Job Control: Effectively address job stressors

Our work suggests that an effective intervention for reducing sickness absence, decreasing costs and improving work productivity for all workers, including those with mental health issues, is to effectively address job stressors. Primary prevention should include identification of psychosocial hazards and reduction of job stressors through job redesign, workload reduction, improved communication, conflict management, and skill development.

i. Improve control over worktime and job demands.

ii. Increase job flexibility.

iii. Ensure job demands are appropriate through job redesign, and skill enhancement.

iv. Increase decision-autonomy/authority

Evidence shows that including employees in decision-making about their work environments improves employee engagement and will often simultaneously address multiple risk factors that contribute to sickness absence, disability-related costs and work productivity.

b. Enhance social support

Interventions that facilitate team work, team-based participatory activities including the creation of autonomous teams e.g. primary nurse teams, or that increase interaction with or support from peers have a positive impact on work outcomes.

c. Mental Health Training / Awareness

Reduce stigma through active preventive policies and work processes for all employees

i. Create opportunities for all employees

Avoid focusing only on employees with mental health conditions to reduce stigma for employees with chronic health conditions.

ii. Design jobs to manage/prevent chronic health conditions

Many workers can have at least one chronic health condition. Procedures should be developed, and jobs should be designed to manage recurring health events for all employees.

iii. Increase flexibility for employees to manage non-medical absence

Work absences attributed to mental health are often not medically required but are needed for other important issues (e.g. parent related duties). Increasing job flexibility with respect to work hours and location, allows workers to adjust their schedules to address non-medical stressors.

iv. Provide mental health training and awareness

d. Health Risk Assessment

We recommend provision of annual health risk assessment inclusive of psychosocial risks and opportunity for feedback to ensure your interventions/ programs are addressing current risk factors and felt needs of employees.

e. Skill Development -Target employees and leadership

i. Focus on Job Competencies

Employees, including managers, supervisors and leadership, often do not have professional training to effectively address psychosocial job demands. Being pro-active by providing training in problem-solving, conflict resolution, supporting

people with mental health conditions, having difficult conversations, etc., may create employees with the skills likely to reduce psychological demands and mitigate unnecessary stress.

There is moderate evidence that the provision of training in problem-solving skills, communication, mediation skills, or other transferable skills intended to address job stressors or enhance peer or supervisor support (e.g. communication with supervisor) are more likely to reduce work absence and improve productivity than passive stress management interventions. Skills training can be a beneficial adjunct to primary prevention activities focused on reduction of psychosocial hazards.

f. Provide open two-way communication channels.

i. Change management

Increasing opportunities for bi-directional communication around changes to work operations (e.g. mergers, new programs, changes to job roles, layoffs, rationalization of services) can mitigate anxiety and other stressors that typically result in lower productivity.

g. Foster physical activity

For the general working population, simple, short duration, inexpensive programs have similar effect size than more complex and expensive programs (e.g. buddy walks, stair walking, other simple programs that best meet the needs and interests of high-risk employees).

2. Secondary Prevention At Risk Workers

a. Increase Access to EAP Services and its Utilization

Many Employee Assistance Programs (EAPs) are underutilized, and limited research evidence specifically suggests that increased commitment of EAP services may decrease sickness absence and increase productivity. There is a need for longitudinal studies that examine the efficacy and effectiveness of services provided for different types of EAP related concerns.

b. EAP services that offer ongoing work-focused job training/CBT

There is moderately strong evidence suggesting EAP programs that enhance competencies to address workplace demands may be more effective in impacting sickness absence, costs and work productivity, as compared to programs that do not address these factors. Examples include work-focused cognitive behavioural therapy that enhances problem-solving skills, communication, mediation skills, or other transferable skills intended to address job stressors or enhance peer or supervisor support (e.g. communication with supervisor).

3. **Tertiary Prevention Return To Work**

   i. **Provide integrated, preventive, occupational and vocational rehabilitation services.**

   Organizations that provide onsite integrated preventive, occupational and vocational rehabilitation services, or arrange with service providers for onsite or proximal service tend to have significant improvements in sickness absence and return to work. Supportive health services such as ergonomists, physical therapists, and other health providers can reduce sickness absence costs and increase work productivity.

   ii. **Timely job accommodation**

   The provision of timely work accommodation for workers and access to clinical, occupational and rehabilitation services, if needed, can reduce claims, sickness absence and mitigate future psychological stressors. Available research focused primarily on workers with musculoskeletal disorders but included some limited review of populations with psychological symptoms.

   iii. **RTW Co-ordinator**

   RTW interventions, where a RTW co-ordinator acted as a direct, on-site workplace liaison can have moderate to large effects on disability outcomes. The most predominant activities centre around assessing workplace factors, developing plans for transitional duties, and facilitating communication and agreement among stakeholders.

   iv. **Structured Team Approach**

   Case management or structured team approaches that: (a) are worker-centred, (b) have accountable policies and processes, (c) are sanctioned by leadership, (d) involve active monitoring of integrated co-ordination services of stakeholders and insurers, and (e) maintain ongoing contact with the worker, the immediate supervisor, and benefit provider result in reduced sickness absence, reduced medical and disability costs and improved work productivity for workers. Most studies were focused on musculoskeletal issues. Further research is necessary to draw similar conclusions for mental health conditions.

   v. **Utilization of health and job design consultants**

   The utilization of consultants with ergonomic and/or vocational rehabilitation skills, work process expertise to support primary prevention, monitor recovery and facilitate return to full or modified duties can assist recovery and return to durable employment.

POST IMPLEMENTATION

1. Reporting and quality improvement

i. Repeat measures

We recommend measuring risks and outcomes after implementation, and at subsequent planned time intervals to take remedial action if necessary.

ii. Opportunity for Feedback

When feasible, program evaluations should be completed by independent evaluators not involved in program planning, or program implementation. Evaluators should consider collecting data from multiple involved stakeholders (e.g., program planners, those involved in implementation, managers, supervisors, workers, etc.) to determine if the program was implemented, accessed and utilized as planned.

iii. Quality Improvement

Utilize data from multiple sources including employees to plan for quality improvement and program renewal.

Often programs need to be refreshed and repeated to address changes in staff and changes in the environment.

CHARACTERISTICS OF INCLUDED STUDIES

Studies were first sorted by topic area which was used to address methodological quality review process and abstraction. Following this process we then re-sorted by intervention components as many of the intervention components were common across topic areas.

By Topic

Mental Health

There were twelve focused systematic reviews specifically focused on mental health. Of these six systematic reviews where focused on common mental health disorders; Corbiere et al et al. (2009)[12], Doki et al. (2015)[13], McLeod (2010)[14], Pomaki et al. (2012)[15], Seymour & Grove et al. (2005)[16], Westgaard and Winkel et al. (2011)[17]; three focused on depression in the workplace: Ebrahim et al. (2014)[18], Nieuwenhuijsen et al. (2014)[19], Furlan et al et al. (2011)[20]; two were focused on mental health promotion: Czabala et al et al. (2011)[21], Lee et al. (2014)[22] focused on men's mental health; and, Skeffington et al. (2013)[23] was focused on PTSD.

Substance Use et al. (Alcohol Only)

Two focused on substance use, Lee et al. (2014)[24] was focused on male dominated workplaces, and Webb et al. (2009)[25] at general work populations.

Stress management

There were eight focused systematic reviews on stress management interventions: Bond et al. (2006)[26], Caulfield et. al et al. (2004)[27], Edwards et al. (2002)[28], Edwards et al. (2003)[29], Giga et al. (2003)[30], LaMontagne et al. (2007)[31], Richardson & Rothstein et al. (2008)[32], Van der Klink et al. (2001)[33]; Bond et al. (2006)[26] was particularly focused on Human Resource Professionals, whereas, Edwards et al. (2002)[28] and Edwards et al. (2003)[29] were focused on mental health professionals.

Occupational Health and Safety

Two focused on occupational health and safety interventions Van Holland et al. (2015)[34], Verbeek, Pulliainen et al. (2009)[35].

Health Promotion and Wellness

Eleven focused on Health Promotion and Wellness. Of these four were focused on physical activity: Amlani et al. (2014)[36], Brown et al. (2011)[37] Conn et al. (2009)[38], Pereira et al. (2015)[39], and seven were focused on comprehensive health promotion programs: Aust & Ducki et al. (2004)[40], Cancielliere et al et al. (2011)[41], Chapman et al. (2012)[42], Kuoppala et al. (2008)[43], Lerner et al. (2012)[44], Pelletier et al. (2009)[39], Van Dongen et al. (2011)[45]. We also reviewed the search and findings of a review of systematic reviews on lifestyle workplace interventions by Schroer et al. (2014)[46] to check for any missed reviews.

Disability Management and Return To Work

Seven systematic reviews that focused on disability management: Franche et al. (2005)[11], Gensby et al. (2012)[47], Kuoppala et al. (2008)[48], Shaw el al. et al. (2008)[49], Tompa et al. (2008)[50], Van Oostrom et al. (2009)[51], Van Vilsteren et al. (2015)[52].

Work Organization and Work Processes

Eleven of the studies addressed work organization and processes. Bambra et al. (2007)[53], Bambra et al et al. (2008)[54], Carroll et al. (2010)[55], Egan et al. (2007)[56], Gilbody 2006)[57], Hodgkinson et al. (2011)[58], Montano et al. (2014)[59], Nijp et al. (2012)[60], Odeen et al. (2013)[61], Patterson et al. (2010)[62], Rivilis et al. (2008)[63].

Musculoskeletal Health

Aas et al et al. (2009)[64], Corbiere et al et al. (2009)[12], Kennedy et al. (2010)[65], Palmer et al. (2012)[66], Silverstein and Clark et al. (2004)[67], and Westgaard and Winkel et al. (2011)[17]

By intervention component

Job Control

There were 32 systematic reviews that included studies with interventions with components directed to enhancing job control. Of these the following reviews included studies that addressed interventions that include employees in identification and control of workplace psychosoclal hazard: Aas et al et al. (2009)[64], Aust & Ducki (2004)[40], Bambra et al et al. (2007)[53], Bambra et al. (2008)[54], Bond et al et al. (2006)[26], Cancielliere et al et al. (2011)[41], Carroll et al et al. (2010)[55], Caulfield et al. (2004)[27], Czbala et al. (2011)[21], Egan et al. (2007)[56], Furlan et al. (2011)[20], Gensby et al. (2012)[47], Giga et al. (2003)[30], Gilbody et al. (2006)[57], Hodgkinson et al. (2011)[58], Kennedy et al. (2010)[65], LaMontagne et al. (2007)[31], Montano et al. (2014)[59], Nijp et al. (2012)[60], Patterson et al. (2010)[62], Pelletier et al. (2009)[39] , Richardson & Rothstein (2008)[32], Rivilis et al. (2008)[63], Seymour & Grove (2005)[16], Shaw el al. (2008)[49], Silverstein and Clark et al. (2004)[67], Van Holland et al. (2015)[34], Van Oostrom et al. (2009)[51], Van Vilsteren et al. (2015)[52], Verbeek et al. (2009)[35], Westgaard and Winkel et al. (2011)[17].

Job Demand

Twenty-nine systematic reviews included interventions with components directed to addressing job demands Aas et al et al. (2009)[64], Bambra et al et al. (2007)[53], Cancielliere et al et al. (2011)[41], Carroll et al et al. (2010)[55], Caulfield et al. (2004)[27], Corbiere et al et al. (2009)[12], Czbala et al et al. (2011)[21], Doki et al. (2015)[13], Ebrahim et al. (2014)[18], Edwards et al. (2003)[29], Egan et al. (2007)[56], Franche et al. (2005)[11], Furlan et al et al. (2011)[20], Gensby et al. (2012)[47], Giga et al. (2003)[30], Gilbody et al. (2006)[57], Kennedy et al. (2010)[65], LaMontagne et al. (2007)[31], Lerner et al. (2012)[44], Montano et al. (2014)[59], Nieuwenhuijsen et al. (2014)[19], Palmer et al. (2012)[66], Patterson et al. (2010)[62], Pomaki et al. (2012)[15, 62], Rivilis et al. (2008)[63], Seymour & Grove et al. (2005)[16], Skeffington et al. (2013)[23], Van Holland et al. (2015)[34], Van Vilsteren et al. (2015)[52].

Social Support

There 25 systematic reviews with components to enhancing social support Aust & Ducki (2004)[40], Bambra et al. (2007)[53], Bambra et al. (2008) [54], Cancielliere et al. (2011)[41], Caulfield et al. (2004), Czbala et al. (2011)[21], Egan et al. (2007)[56], Franche et al. (2005)[11], Gilbody et al. (2006)[57], LaMontagne et al. (2007)[31], Lee et al. (2014)[22], Lerner et al. (2012)[44], Montano et al. (2014)[59], Palmer et al. (2012)[66], Patterson et al. (2010)[62], Richardson & Rothstein (2008)[32], Rivilis et al. (2008)[63], Seymour & Grove (2005)[16], Tompa et al. (2008)[50], Webb et al. (2009).[25]

Mental Health

There were 24 systematic reviews with components to improving mental health conditions and substance use in the workplace. Bambra et al. (2007)[53], Bambra et al. (2008)[54], Cancielliere et al. (2011)[41], Corbiere et al et al. (2009)[12], Czbala et al et al. (2011)[21], Doki et al. (2015)[13], Ebrahim et al. (2014)[18], Egan et al. (2007)[56], Furlan et al et al. (2011)[20], Giga et al. (2003)[30], LaMontagne et al. (2007)[31], Lerner et al. (2012)[44], Lee et al. (2014)[22], Mcleod (2010)[14], Montano et al. (2014)[59], Nieuwenhuijsen et al. (2014)[19], Nijp et al. (2012)[60], Patterson et al. (2010)[62], Pomaki et al. (2012)[15], Richardson & Rothstein (2008)[32], Seymour & Grove (2005)[16], Skeffington et al. (2013)[23], Van Vilsteren et al. (2015)[52], Two focused on substance use Lee et al. (2014)[24] and Webb et al. (2009)[25]

Stress Management

There were 32 systematic reviews that included components to specifically improve stress management. Aas et al. (2009)[64], Aust & Ducki (2004)[40], Bambra et al. (2007)[53], Bambra et al. (2008) [54], Bond et al. (2006)[26], Brown et al. (2011)[37], Cancielliere et al. (2011)[41], Caulfield et al. (2004)[27], Conn et al. (2009)[38], Czbala et al. (2011)[21], Edwards et al. (2002)[28], Edwards et al. (2003)[29], Egan et al. (2007)[56], Furlan et al. (2011)[20], Giga et al. (2003)[30], Gilbody et al. (2006)[57], LaMontagne et al. (2007)[31], Mcleod (2010)[14], Montano et al. (2014)[59], Nijp, Beckers et al. (2012)[60], Odeen et al. (2013)[61], Patterson et al. (2010)[62], Pelletier et al. (2009)[39], Pereira et al. (2015)[68], Pomaki et al. (2012)[15], Richardson & Rothstein et al. (2008)[32], Rivilis et al. (2008)[63], Seymour & Grove et al. (2005)[16], Skeffington et al. (2013)[23], Van der Klink et al. (2001)[33], Van Dongen et al. (2011)[45], Van Vilsteren et al. (2015)[52]

Wellness and Health Promotion

There were 24 systematic reviews that reported on aspects of health promotion and wellness initiatives assessing their impact on mental health, or that happened concurrently with other directed interventions directed at changes to organizational culture. Amlani et al. (2014)[36],Aust & Ducki (2004)[40], Bambra et al. (2008), Brown (2011)[37] Cancielliere et al. (2011), Chapman et al. (2012)[42],Conn et al. (2009)[38], Czbala et al. (2011)[21], Edwards et al. (2003)[29], Kuoppala et al. (2008)[43], Kuoppala et al. (2008)[48], Egan et al. (2007)[56], Furlan et al. (2011)[20], Giga et al. (2003)[30], Lerner et al. (2013)[44], LaMontagne et al. (2007)[31], Montano et al. (2014)[59], Nijp et al. (2012)[60], Patterson et al. (2010)[39], Pelletier et al. (2009)[39],Pereira et al. (2015)[68] Richardson & Rothstein (2008)[32], Seymour & Grove (2005)[16], Van Dongen et al. (2011)[45]

JOB CONTROL

There are 32 systematic reviews that report on interventions with some type of worker participatory component that increases employee control over the work environment. Increased job control includes the ability to make decisions about when, where or how to do the work assigned to an employee. It includes participation in the identification and control of workplace psychosocial hazards.

Approximately 111 individual studies with interventions affecting job control were included in the systematic reviews. As noted previously, efforts were made to remove duplicate studies, but the way results are reported in some systematic reviews makes it difficult to identify which studies are associated with specific outcomes. Therefore, it is possible that there is some replication within our results. Of the 111 studies, 70 reported positive impacts on absenteeism, 34 reported positive impacts on cost, and 33 reported positive impacts on productivity. Fifteen studies reported no impact on absenteeism, five reported no impact on cost and two reported no impact on performance. Only three studies report negative impacts on any outcomes of interest. Table 1 below reports the proportion of studies reporting positive, negative or null impacts on the outcomes of interest.

	Absenteeism 87 studies	Cost 41 studies	Productivity 34 Studies
Positive impact	80.5%*	82.9%	94%
Negative impact	2.2%	2.4%	0%
No impact	17.2%	12.1%	5.9%

*Number of studies reporting a positive impact/total number of studies reporting on absenteeism

Twelve of the systematic reviews [26, 31, 40, 47, 49, 53, 55, 56, 59, 60, 62, 63] focus primarily on interventions that increase job control, as opposed to reviews where a few studies report on job control interventions, but job control is not the key focus of the review. Two of the highest quality reviews assess return-to-work (RTW) interventions that provide opportunities for employees to participate in planning their own workplace accommodations[38, 56] Two other high quality reviews[55, 62] assess the effects of preventive approaches such as stress reduction working committees and participatory ergonomics. Examples of other interventions that involve employees in the identification and control of workplace psychosocial hazards, and are positively associated with the outcomes of interest, include health circles[40], increased work time control[60] and autonomous teams[62].

In one example, Patterson et al.[62] conducted a moderate quality but comprehensive review assessing the relationships between human resource management practices and performance. The authors assess a wide range of practices including work design, performance management, and employee participation. Sixteen of the 450 studies they reviewed were intervention studies reporting on our outcomes of interest. Patterson et al. [62] find that no single HRM practice or bundle of practices is effective. However, potentially effective practices were identified. They

conclude: (i) there is consistent evidence that job design practices that enhance employee autonomy and control have a positive impact on sickness absence and health, (ii) a small number of studies also support involving employees in the design and implementation of changes that affect their work, (iii) in the health literature, quality improvement teams were found to improve performance (measured by patient outcomes), and, (iv) the use of participatory goal setting and feedback improve performance outcomes.

In a second example, Bond et al. [26] carried out a series of literature syntheses to quantify the level of evidence supporting UK management standards focused on six workplace stressors (demands, control, support, relationships, role, and change). Like our review they were focused on primary work-outcomes including measures of performance including sales targets achieved, error rates acquired, system downtime, supervisor or customer ratings, absenteeism rates, and turn-over intention. Five studies included interventions impacting job control. Two showed a positive impact on absenteeism, three showed a positive impact on cost and two showed a positive impact on productivity. One other study reported no impact on cost, and none report negative impacts. Many of the studies in Bond et al. [26] are not experimental in design, and therefore were not included in our review. However, the authors conclude that greater control leads to better performance (objectively measured), better performance ratings, less absenteeism and less turnover intention. They also suggest that well-designed roles, effective change management and communication, and better support are associated with positive impacts on outcomes of interest to organizations.

LaMontagne et al.[31] conducted a systematic review of the job stress intervention evaluation literature between 1990-2005 which identified 90 studies of single stress interventions. Twenty-seven of the studies reported in LaMontagne included an intervention that addressed job control in some way. Twelve of these studies report a positive impact on absenteeism, seven report a positive impact on productivity and five report a positive impact on cost. Three report no impact on any outcomes of interest, and none report a negative impact. The authors build on the traditional hierarchy of OHS controls and compared interventions by their focus (e.g. primary, secondary and tertiary prevention), the participation level of employees and whether the intervention was informed through a risk assessment or other needs assessment. Primary prevention targeted workplace stressors (e.g. job redesign, workload reduction, improved communication, conflict management, and skills development). Whereas, secondary prevention focused on employee responses to stress (e.g. cognitive behavioural therapy, coping skills, anger management). Tertiary prevention focused on workers with stress-related symptoms and disease (e.g. return to work programs, occupational therapy, medical intervention). Lamontagne et al. [31] congruent with other comparative studies found that individual focused systems approaches without primary prevention or needs/risk assessments do not tend to impact primary work-outcomes, although they may have some benefits at an individual level.

The quantity and consistency of studies assessing the effect of interventions that increase job control or worker participation in decision-making, indicate the outcomes of these interventions are highly consistent and positive. More studies assess absence than any other outcome. While we are not able to evaluate the quality of the research, the quantity and consistency suggest that by increasing worker participation or control over their work environment, employers are likely to see improvements in absenteeism and productivity, with little risk of causing harm to their

employees or increasing costs to the organization. These almost exclusively positive results should be interpreted with some caution as they may reflect a bias toward publication of positive results. Authors of the systematic reviews also point out factors may negatively impact successful implementation, including lack of leadership support for employee participation initiatives or inconsistent implementation. Increasing job control works most effectively when administrative data and employee participation are used to identify hazards (e.g. job demands) and stakeholders jointly brainstorm solutions to mitigate psychosocial risk.

JOB DEMANDS

There are 29 systematic reviews that report on interventions that impact employee job demands. Eighteen were classified as high-quality systematic reviews. Interventions were included in the job demands analysis if they included elements affecting the pace of work, task complexity, physical, cognitive, or emotional demands. Many of the interventions in these studies address both job control and job demands, so we are not able to determine which aspect of the intervention is responsible for the associated outcomes. However, the evidence suggests that interventions that affect both types of psychosocial risk factors have a positive impact on workplace outcomes.

Eighty individual studies within the 29 systematic reviews assess interventions impacting job demands in some way. Of these, 45 reported positive impacts on absenteeism, 24 reported positive impacts on cost, and 14 reported positive impacts on productivity. Table 2 below reports the proportion of studies reporting positive, negative or null impacts on the outcomes of interest.

	Absenteeism 68 studies	Cost 26 studies	Productivity 15 Studies
Positive impact	66.2%	92.3%	93.3%
Negative impact	2.9%	3.8%	6.7%
No impact	30.9%	3.8%	0%

Four of the high-quality reviews assessed the impact of interventions addressing return-to-work (RTW) for employees with disabling health conditions.[11, 47, 53, 56] [11, 47, 53, 56] In these interventions, job demands were typically reduced on at least a short-term basis to accommodate employees returning to work. Evidence is relatively consistent and positive. For example, Franche et al.[11] found strong evidence that work disability duration is significantly reduced by work accommodation offers and contact between healthcare providers and the workplace. Similarly, Gensby et al. [47] evaluated the effectiveness of workplace disability management programs implemented and practiced by employers on promoting return to work. They suggested that large companies with the capacity of in-house clinical/ occupational services can improve the co-ordination of disability management services. Smaller organizations could potentially use external suppliers for onsite rehabilitation services. They noted that smaller organization may also have fewer interpersonal and administrative barriers. Intervention components with labour/management involvement, support from senior leadership, commitment to involving the injured worker and immediate supervisor, as well as engagement of in-house clinical/occupational support appear promising.

Van Vilsteren et al.[52] also focused on RTW, investigating the effectiveness of workplace interventions in preventing work disability among sick-listed workers, when compared to usual care or clinical interventions. They included 14 studies, with nine studies addressing workers with a variety of musculoskeletal disorders. Several of the musculoskeletal interventions had similar characteristics involving higher levels of workplace engagement and targeting job demands. In

one of the interventions stakeholders included the worker, supervisor, occupational physician and general practitioner, if needed. The stakeholders collaborated on a worksite assessment, work adjustments based on methods used in participatory ergonomics, independent ranking of barriers to RTW by the worker and supervisor, and team meetings to brainstorm possible solutions. Opportunities to address conflicts between the occupational physician and general practitioner were also included. In another intervention an interview focused on the social and occupational situation, including possible work adaptation, ergonomic assessment/improvements and integrated care coordinated by a clinical occupational physician. There was only one intervention that included labour representatives and co-workers, in addition to other workplace stakeholders. This intervention, known as the Sherbrooke model included participatory ergonomics, a review of worker tasks, problem-solving, and work-focused cognitive behavioural therapy with recommendations to the employer. Van Vilsteren et al. [52] concluded that there was moderate quality evidence that workplace interventions help workers return to work and reduce work duration of the initial RTW for workers with primary musculoskeletal disorders. This was not the case for workers with primary mental health disorders. Only five studies in the Van Vilsteren et al [52] review included workers with mental health issues. The scarcity of intervention studies addressing mental health and psychosocial job demands, as opposed to physical job demands, point to an important direction for future research.

Other interventions that addressed job demands included participatory ergonomics[52, 63], task restructuring[28, 52], extra rest breaks for workers engaged in repetitive work[41, 59], skills development or cognitive behaviour therapy to improve problem solving skills[13, 15, 16, 18, 19, 23, 37, 53, 56]. Interventions that directly reduce job demands through task restructuring, rest breaks or alterations to the work environment (e.g. ergonomic changes) generally have a positive impact on the outcomes of interest.

Rivilis et al.[63], for example, conduct a review of the effectiveness of participatory ergonomic interventions on health. Participatory ergonomics, although often targeting musculoskeletal conditions, may have a psychosocial impact by increasing job control, reducing psychological stress associated with pain or repetitive tasks, and increasing perceived social support. Studies were included if they included psychosocial measures as well as examining our outcomes of interest. Three of the participatory ergonomic studies measuring psychosocial outcomes had a positive impact on absenteeism, one had no impact for white collar workers. Four studies showed a positive impact on cost, one showed a negative impact, none reported on productivity impacts. Rivilis et al.[63] found that participatory ergonomics, relatively consistently, led to improvements in injury claims, symptoms and absenteeism.

Evidence supporting skill development or CBT, which is intended to help employees better cope with job demands, was less consistent than the evidence supporting a more direct reduction in job demands through accommodations, task restructuring or rest breaks. For example, Pomaki et al. [15] found moderate evidence that psychological interventions (CBT) improved work functioning, quality of life, and economic outcomes. In contrast, Doki et al.[13] conducted a meta-analysis of ten studies assessing the impact of psychological interventions provided to employees with mental health conditions. They found no significant difference in sick leave days when comparing the psychosocial intervention and care as usual. A systematic review completed by Ebrahim et al.[18]

included a single study that addressed the level of effectiveness of psychotherapy on absenteeism and cost. For employees on sickness absence due to depression, anxiety or adjustment disorders, work-focused CBT resulted in substantially reduced absenteeism and cost. Ebrahim et al.[18] offer an explanation for the mixed results of CBT interventions by suggesting that work-focused CBT may be more effective than standard CBT for workers with mental health conditions.

Overall, the quantity and consistency of evidence supporting reduction of job demands is mixed. The majority of studies have assessed interventions that reduce job demands in the context of RTW, or for musculoskeletal rather than mental health conditions. The evidence supporting these types of interventions is substantial, consistent and positive. Evidence supporting the use of CBT to help employees with mental health conditions is limited, though reviews of these types of studies suggest they may be more effective if the CBT is work-focused.

STRESS MANAGEMENT

There were eight systematic reviews that specifically focused on stress management, with an additional 24 systematic reviews that included stress management components as part of their interventions. Of the nine focused on stress reduction, two were considered high quality systematic reviews [32, 33], three were considered moderate quality [26, 27, 31], and the remaining three were considered low quality reviews[28-30]. One hundred and five individual studies within the 32 systematic reviews assess interventions impacting stress management. Of these, 45 reported positive impacts on absenteeism, 14 on cost, and 31 on productivity. Forty-two studies reported no impact on absenteeism and three reported no impact on productivity. Only three of the studies had negative outcomes: two negative impacts on absenteeism and one on cost. Table 3 below reports the proportion of studies reporting positive, negative or null impacts on the outcomes of interest.

	Absenteeism 89 studies	Cost 15 studies	Productivity 34 Studies
Positive impact	50.6%	93.3%	91.2%
Negative impact	2.2%	0.7%	0%
No impact	47.2%	0%	9.7%

Since the focus of this best evidence synthesis is on psychosocial hazards and mental health interventions, we have provided greater depth in the discussion, including descriptions of the interventions and conditions for individual studies. We begin with a discussion of reviews with a larger number of studies meeting our inclusion criteria.

Czabala et al.[21] is a high-quality review that identifies evidence-based psychosocial workplace programs and interventions that improve mental health, work-related individual and organizational outcomes. They found 52 intervention studies and categorized intervention characteristics into 6 groups: (i) skills training (stress management, coping, problem-solving, communication and cognitive skills), (ii) job specific competency training, (iii) working condition modification (work time, work organization, schedule, employer-employee relationships), (iv) relaxation, (v) physical exercise, and, (vi) multicomponent. There were 18 studies that addressed performance, and 5 studies that addressed absenteeism. Four studies reported a positive impact on absenteeism and four reported a positive impact on productivity. The authors conclude that in high or moderate quality studies, interventions have a positive effect on worker ability to cope with stress, increase job satisfaction, and reduce burnout. The best results were achieved for absenteeism reduction, while the least positive effects were obtained for co-workers and/or supervisor support. They suggest that stress management may only be an adjunct to organizational change as it is crucial to remove the sources of stress in the first place.

Richardson & Rothstein[32] conducted a meta-analysis of occupational stress management intervention programs. There were 36 experimental groups representing 55 different interventions with a total sample size of 2,847 employees, 59% were female, with the mean age

was 35.4. There were 14 studies that addressed our primary work outcomes, seven included sickness absence, and seven addressed productivity. In their meta-analysis, stress management interventions did not impact sickness absence. However, seven organizational intervention studies focused on work-related competency skill training, positively impacted work productivity. There were several important findings arising from this review that were contrary to past reviews. They found that single component interventions had a much larger effect size than multi-component interventions. Four of the single-component organizational interventions that taught some form of training skills that would assist employees in their jobs, such as, either increasing personal resources or management skills, had a larger effect size than meditation or relaxation skills. The authors also found that cognitive–behavioural interventions produced stronger effects than relaxation or meditation techniques. They suggest that relaxation and meditation are more passive techniques that intend to refocus attention away from stress and increase awareness of tension, whereas, CBT directs the individual to address dysfunctional ideas, emotions, or behaviours and take a more active role. Richardson & Rothstein[32] note that contrary to their findings, most workplaces (69% of the 55 interventions studied) offer relaxation and meditation interventions. Whereas the evidence suggests that employers should provide training programs directed at enhancing and refreshing skills and competencies relevant to their work demands, as well the need to address primary stressors at work. Additional findings relevant to employers and workers was that there was no difference in effect size between shorter training programs versus longer duration programs.

Van der Klink et al.[33] in his meta-analysis done seven years earlier also found higher effects for cognitive behavioural stress management approaches for populations with stress-related disorders, than more passive relaxation techniques, such as meditation, or relaxation techniques. However, they noted that in one of the included high-quality studies, a single cognitive–behavioural program directed at workers with low job control did not yield a significant effect.

LaMontagne et al. [31], described above, included 22 stress reduction studies that addressed our primary work outcomes. There were 15 studies that reduced sickness absence, and six studies with no effect on sickness absence. The interventions in this review were mainly integrated or comprehensive stress management programs including education, discussion groups, counselling, skill development and action planning. They concluded that individual interventions alone are less likely to have favourable impacts on organizational outcomes.

Caulfield et al. [27] conducted a systematic review of occupational stress interventions limited to Australia between 1993 and 2003. They identified six studies directed at the individual level using passive relaxation techniques. Only one of these was work-focused and met our inclusion criteria. Using a participatory approach, the focus was on work redesign, access and encouragement of using psychological health services. Implementation of recommendations were monitored by management, counselors and individual participants. There was large increase in counselor services in the first year of the intervention (increase of 500 staff /counselor contacts), and a reduction of workers compensation stress claims.

Bond et al.[26] also found only one study that met our criteria for inclusion as a stress management technique. It is worth describing as a natural experiment evaluating a stress intervention implemented during a corporate merger. This was a quasi-experimental nested study that took

place across two USA manufacturing company plants that were in the process of merging with another similar firm. Beyond an observation study of assessing the impact of such a merger on employee-related outcomes (e.g., job uncertainty) and business-related ones (i.e., turnover intention, performance, and absenteeism); they also wanted to evaluate the effectiveness of a change communication program designed to mitigate the detrimental impact of the merger. For this study they enhanced two-way management-employee communication with employees in one of the manufacturing plants. The program was designed to provide employees with specific timely information about the impact of the merger on layoffs, promotions, changes in pay etc. as well as the creation of a newsletter, and weekly departmental meetings, and a telephone hotline answered by a personnel manager, whereas the other plant employees received a letter from the CEO which was the typical way communication was addressed. Those in the intervention group reported significant increases in self-rated performance and significant reductions in absenteeism. This study had a control group, though was not a rigorous design, for instance not accounting for possible communication between plants.

Edwards et al. [28] conducted a review of stress management interventions for mental health professionals. In the single study addressing our primary work outcomes the researchers used a skilled facilitator to initiate participatory teams at five worksites with a three-year evaluation with a control group. They found that productivity increased in the intervention group, sickness absence was not measured. A second Edwards et al. [29] review of stress and stress management interventions identified eight papers, of which only one addressed our outcomes of interest. In this study, behavioural training was provided to nurses to develop skills and knowledge related to their job demands. There were positive outcomes in sickness absence and productivity.

Finally, Giga et al. [30] investigated organizational stress management interventions in the United Kingdom. There were two before and after studies without a control group that specifically addressed stress management both evaluating employee assistance programs (EAP). In one study EAP reduced sickness absence as well anxiety and depression. In the second study there was no improvement in sickness absence, however the study authors noted internal organizational issues were a main source of dissatisfaction.

Overall, the stress management intervention literature, while quite robust in terms of quantity, shows inconsistent effects on absenteeism. Several of the systematic reviews conclude that skills training and cognitive behavioural therapy that supports workers in managing stress/high job demands, appears to have a more positive impact than more passive techniques like meditation or relaxation. The impacts on cost and productivity are predominantly positive, regardless of intervention type. While employers should first try to reduce psychosocial hazards and high job demands, implementing skills training and CBT can be a beneficial adjunct to primary prevention activities.

MENTAL HEALTH AND SUBSTANCE USE

There were 11 systematic reviews that specifically focused on mental health and two reviews that addressed substance use disorders. There were an additional 11 systematic reviews that included mental health components as part of their interventions.

Of the 13 systematic reviews focused on mental health, six were rated high quality [13, 15, 16, 19-21] and five were rated moderate quality reviews.[12, 14, 18, 22, 23] For substance use Webb et al.[25] was rated high quality, and Lee et al.[24] moderate quality. There were an additional 11 systematic reviews that included mental health components.[30, 31, 41, 44, 52-54, 56, 59, 60, 62] Within these 24 systematic reviews, 65 individual studies incorporate interventions impacting mental health. Forty studies reported positive impacts on absenteeism, 13 on cost, and 24 on productivity. Nine studies reported no impact on absenteeism, two reported no impact on cost, and two reported no impact on productivity. Only seven studies had overall negative outcomes: one negative for absenteeism, five for cost, and one for productivity. Table 4 below reports the proportion of studies reporting positive, negative or null impacts on the outcomes of interest.

	Absenteeism 40 studies	Cost 13 studies	Productivity 24 studies
Positive impact	75%	46.1%	87.5%
Negative impact	2.5%	38.5%	4.2%
No impact	22.5%	15.4%	8.3%

As with our discussion on stress, our discussion of mental health and substance use interventions provides greater detail regarding the components and conditions of the interventions. We first discuss interventions addressing management of common mental health disorders such as anxiety and depression. This is followed by a discussion of interventions targeting RTW for employees on leave with mental health conditions. Finally, we discuss reviews assessing interventions for substance use disorders.

Furlan et al.[20] conduct a review to identify evidence-based interventions that are effective in managing depression. Examples of interventions included: a) enhanced collaborative mental health care delivered by psychiatrists, b) a worksite stress identification and reduction program, c) physician training in the Dutch guideline for employees on mental health sick leave, d) CBT to improve problem solving and stress inoculation, e) occupational physicians trained in diagnosis and treatment of depressive disorders, and e) a telephone intervention with psycho-educational workbook. The four studies from Furlan et al.[20] reporting on our outcomes of interest showed the interventions had a positive impact on absenteeism.

Pomaki et al.[15] in their review summarizing workplace-based interventions in workers with common mental health conditions identified studies measuring burnout, depression and quality of life. Interventions included a multimodal psychological intervention with problem-solving, stress inoculation, and telephone contact. Primary participants were employees on sick leave for mental health conditions. This review included two primary studies that showed no effects on

absenteeism and one with a positive impact. Similar findings were evident for cost and productivity with a single study indicating positive impacts on each of cost and productivity. In contrast, one study indicated a negative impact on productivity, such that the occupational healthcare costs were higher in the intervention group.

Similarly, Nieuwenhuijsen et al.[19], Seymour & Grove[16], and Lee et al.[22] are syntheses that evaluate multi-modal mental health interventions. Nieuwenhuijsen et al.[19]evaluated the effectiveness of interventions aimed at reducing work disability in employees with depressive disorders. They find a positive effect on absenteeism with an intervention that included work coaching and modification, as well as coordinated care and cognitive-behavioural strategies. Seymour & Grove[16] assessed evidence on the management of common mental disorders and mental distress in the work environment. They identified four primary studies that specifically considered work outcomes. Two studies found positive outcomes for absenteeism, and two found positive outcomes for productivity. Interventions took place with healthcare, government, insurance, and fire service workers on sick leave. Components of the intervention included social support, problem-solving, stress management/reduction, exercise, assertiveness training and interpersonal communication for both routine and high-risk situations. Lee et al.[22] investigated mental health interventions in male dominated workplaces (e.g. manufacturing, construction). Intervention components included distributing information to workers about mental health, providing additional social support, offering access to treatment, educating managers about mental health, individualized consultation and feedback, problem solving, team-based approaches and improvements to the work environment. Two of the interventions significantly reduced sickness absence. In the third study, the interventions resulted in productivity improvements, sickness absence was not measured.

McLeod[14] found some consistent though limited evidence that workplace counselling, including cognitive-behavioural, client-centered and brief eclectic therapy types was helpful in reducing absenteeism, decreasing cost and improving productivity. For studies that included primarily post office, police, and transportation workers with mental health symptoms, five studies indicated positive outcomes for absenteeism, three indicated positive outcomes for cost, and six indicated positive outcomes for productivity (one study showed no impact on productivity).

In the systematic review completed by Skeffington et al.[23], only two studies were considered to specifically address work outcomes. The single study addressing absenteeism found no positive effectof a military pre-deployment stress debriefing. In the second study, active planning coping strategies learned as an aspect of cognitive-behavioural stress management resulted in positive findings for productivity.

Turning to reviews assessing RTW interventions, Doki et al. [13] looked at the effectiveness of interventions employed by occupational health services to reduce sick leave duration for people with psychiatric disorders. Three studies that were not already included in other reviews are included [69, 70, 71]. The intervention in Willert et al.[69] included work-related problem-solving skills and/or CBT led by a psychologist. Groups met weekly for the first 4 weeks, and then every two weeks for 3 months. Education included psycho-education on stress, identifying and modifying dysfunctional thinking, communication and stress. Homework assignments were aimed at promoting implementation of techniques at work. Kant et al.[70] focused on the timing of an intervention with an occupational physician. The physician discussed symptoms and complaints

and reviewed high-risk factors, discussed benefits of early intervention and the relationship between symptoms and risk of long-term sickness. Targeted treatment was recommended based on symptoms and ranged from sociomedical counselling by an occupational physician, psychotherapy, counselling by social worker, or specialist care. Arends et al.[71] included training based on guidelines for managing patients with mental health disorders. The focus was on helping workers regain control by walking them through a problem-solving process to find and implement solutions for sickness absence. Steps included: creating an inventory problems and opportunities, brainstorming solutions, making action plans with the supervisor, evaluating the action plan and implementation. A separate component was identifying whether additional help was needed in communication with supervisor. The role of the occupational physician was to guide and to reflect on the significance of the problem and feasibility of solution. There were two to five consultations within 3 months. Some occupational physicians found it difficult to not play an active role in brainstorming or directing solutions. Interventions in all three studies reduced sickness absence.

Corbiere et al.[12] also reviewed occupational and health outcomes of psychological RTW interventions that aim to support people with psychological and/or physical health problems. Overall, their review suggested positive findings for absenteeism (three studies demonstrated positive outcomes; one showed no impact), and minimally positive outcomes for productivity (one positive study). The interventions included aspects such as work re-organization, psychosocial intervention, and stress management.

Only two systematic reviews addressed substance abuse disorders, Webb et al.[25] and Lee et al.[24]. Webb et al.[25] completed a systematic review that included two primary articles that measure our work outcomes of interest. One intervention included brief counselling, intensive counselling or no intervention for employees with positive alcohol screening. The results suggested no impacts on absenteeism-related work outcomes. The second study found that interventions addressing workplace attitudes and substance use recognition training resulted in positive impacts for work-related productivity outcomes. The second review addressing substance abuse was completed by Lee et al.[24]. Three primary studies were included that paid specific attention to workplace costs, including injury and compensation rates/costs and work hours. Interventions included social support, workplace policy change, workplace attitudes and training regarding substance use awareness. The workplaces tended to be male-dominated (e.g., transportation, manufacturing, construction, etc.). All three studies found the interventions had positive cost outcomes, suggesting generally positive cost implications of the group interventions.

Overall, the evidence regarding the impact of mental health interventions on organizational outcomes is limited. The evidence that these interventions reduce absenteeism and increase productivity is relatively consistent. However, the evidence regarding impact on cost is quite mixed with almost 40% of the interventions having negative cost implications. Multimodal interventions that include components addressing workplace stressors appear to be the most effective to prevent absence related to mental health disorders and to improve RTW. Very little work has been done on the organizational effectiveness of substance use interventions.

SOCIAL SUPPORT

There were no systematic reviews that specifically focused on social support. However, there were 20 systematic reviews that included interventions that addressed social support in some way. Studies were included if the intervention was intended to increase support, or if the researchers measured perceived support from supervisors, coworkers or the organization. Approximately 53 individual studies had interventions with a social support component. These interventions were associated with primarily positive outcomes for absenteeism (30 studies), cost (19 studies) and productivity (13 studies). Nine studies reported no impact and only one study reported a negative impact. Table 5 below reports the proportion of studies reporting positive, negative or null impacts on the outcomes of interest.

	Absenteeism 39 studies	Cost 19 studies	Productivity 14 studies
Positive impact	76.9%	100%	92.8%
Negative impact	2.5%	0%	0%
No impact	20.5%	0%	7.2%

The interventions with social support components can be categorized into three main types:

1. *Interventions that involve increased interaction with and/or support from peers.*[24, 40, 41, 53] For example, Lee et al. [24] assess interventions intended to reduce substance use through peer and managerial support along with drug and alcohol testing. They find positive impacts on employer cost. Other examples include increased team work (Bambra et al.)[53] and health circles (Aust & Ducki)[40]. More specifically, Aust & Ducki[40] assess the effects of employee involvement in health circles on working conditions, employee health, and absenteeism in German companies. Although these studies were held in Germany, the participatory model was based on the Ottawa Charter on Health Promotion which was adopted by the WHO in 1986. The model is based on participation and empowerment. The goal is to organize and to change working conditions that are harmful to employees, and to enhance working conditions to mitigate both physical and mental hazards. A health circle is a contractual agreement between labour and management and their commitment to program objectives.
2. *Training in leadership, mental health awareness, communication skills, or emotional intelligence.* [41] [16, 21, 27, 31, 41, 57, 59,]. For example, Cancielliere et al. (2011)[41] found support for improving supervisor/manager knowledge regarding mental health in the workplace.
3. *Supervisor and organizational support for employees returning to work after illness or injury.*[11, 50, 66]. These reviews assess comprehensive, multi-component RTW interventions that include early contact with the returning employee, as well as supervisor and employee involvement in RTW planning[11].

The systematic review with the largest number of studies containing social support components, LaMontagne et al. (2007)[31], includes a broad range of intervention types that fall into one or

more of the three broad categories above. The review that does not fit as neatly into the three categories above is Patterson et al.[62] Although there are a limited number of intervention studies, they do find support for the impact of performance management practices in both the health and non-health literature. More particularly, feedback, when combined with participative goal setting, was found to have a positive impact on job performance and job satisfaction.

Since many of the social support interventions include more than one component, it is difficult to identify the source of the positive impacts. However, as noted by Montano et al.,[59] there seems to be a difference between individual-level and organizational-level interventions. Organization-level interventions address psychological factors, social factors, processes and procedures needed to complete work tasks. Individual-level interventions can be more easily contained to one person or task and include changes to the physical environment (e.g. ergonomics) or the speed/pace or intensity of work. They found that for individual-level interventions, effect sizes were strongest when the treatment focused on CBT or interventions that strengthen employees' ability to cope with stressful work. If these interventions had more than one component, they were less likely to be successful. Organization-level interventions, however, seem to be more effective when they have more than one component. They suggest that a hierarchy of improvements addressing workplace risks may be more effective in a complex work environment:

> Given the many difficulties of implementation, including the interference of a structural change with established organizational procedures, it may be crucial to develop a comprehensive set of modifications that can exert sufficient impact on employees who are exposed to a complex work environment. This is, for instance, the case if material improvements of work tasks are linked with changes in the division of work or other features of work organization, and/or with increased flexibility of work schedules (pg. 6).[59]

Overall, the evidence regarding the impact of social support intervention on organizational outcomes (absenteeism, cost and productivity) is limited since there are fewer than 50 individual studies, but consistently positive. As with other multi-component interventions, it is difficult to know which aspects of an intervention are responsible for the outcomes found in the studies. However, it seems that employers can receive the largest benefit by implementing multi-component interventions that address primary prevention (stress reduction through demand management, increased coping skills) along with increased social support through education and participation.

WELLNESS AND HEALTH PROMOTION

There were twelve reviews that specifically focused on health promotion and wellness. There were seven on comprehensive workplace health promotion programs (WHP) and five focused on physical activity. Of the eight reviews that focused on workplace health promotion four were rated as high quality[41, 42, 44, 45] and four were rated as moderate quality.[39, 40, 43, 48] Of the four systematic reviews on physical activity there were three that were rated as high quality[36, 38, 68] and one rated as medium quality, Brown et al.[37]. There were an additional 20 systematic reviews that included wellness and health promotion components.

The 32 systematic reviews with health promotion or wellness components included 105 individual studies. Of these, 52 reported positive impacts on absenteeism, 18 on cost, and 31 on productivity. Twenty-four studies reported no impact on absenteeism, one reported no impact on cost, and five reported no impact on productivity. Six studies reported negative impacts on absenteeism, seven on cost, and five on productivity. One study reported mixed results on absenteeism. Table 5 below reports the proportion of studies reporting positive, negative or null impacts on the outcomes of interest.

	Absenteeism 82 studies	Cost 26 studies	Productivity 41 studies
Positive impact	63.4%	69.2%	75.6%
Negative impact	7.3%	26.9%	12.2%
No impact	29.3%	3.8%	12.2%

Cancielliere et al.[41] assessed whether workplace health promotion programs are effective at improving presenteeism in workers. They found preliminary evidence to support: a) involving employees' supervisors or managers in WHP programs, b) targeting organizational and/or environmental factors to influence behaviour, c) screening workers using health risk assessments or other methods, d) improving supervisor/manager knowledge regarding mental health in the workplace, e) allowing physical exercise to occur during working hours and f) individually tailoring programs. In one individual study, the intervention included tailoring advice based on the employee's readiness to change. Access was provided to a web portal that included interactive online behaviour-change programs. Emails were sent bimonthly on wellness topics relevant to the individual, and four onsite seminars were provided based on the four most prevalent health risks. The intervention reduced sickness absence and increased productivity.

Chapman[42] conducted a meta-analysis evaluating the cost-effectiveness of worksite health promotion programs. A total of 62 studies were included. Over 70% of the studies used only one outcome measure. There were 26 that used sickness absence, and seven that used workers compensation claim data. There were only two studies that met our inclusion criteria of addressing mental health issues. In one of these studies, the "connections" health promotion program increased mental health services costs. The study authors noted that health promotion

initiatives may increase participant willingness to utilize behavioural health services, thus increasing costs, but that it may lead to preventing future behavioural health problems. A second study showed that a worksite health promotion program decreased presenteeism by 10.4%, which translated to a 1:4.29 cost-benefit contribution.

Lerner et al. [44] in their review of employee-targeted workplace health promotion programs identified 44 studies, with 16 studies meeting our inclusion criteria. There were nine studies mostly focused on general health promotion programs with multiple components typically devoted to a specific risk factor category or health behaviour. These positively reduced sickness absence. There were mixed results for costs with five positive studies and three negative studies. Five studies showed improvements in productivity and two studies had no effect.

Van Dongen et al.[45] summarized the current evidence on the financial return of workplace health promotion programs aimed at improving nutrition and or increasing physical activity. They located 18 studies including four RCT's, 13 non-randomized studies and one modelling study. The non-randomized studies showed positive outcomes on absenteeism, costs, productivity and presenteeism (when measured), whereas the 4 RCT's did not provide positive results on any outcome.

Kuoppala et al.[43] studied the association between work health promotion, job well-being, workability, absenteeism and early retirement. There were two studies (RCT/CCT) investigating exercise, two studies (RCTs) addressing ergonomics using an education intervention, and two studies (RCTs) investigating psychological interventions. All provided weak evidence. They reported that work redesign appears to increase mental well-being and decrease sickness absences, and activities promoting both healthy lifestyle and ergonomics decrease sickness absence.

Pelletier et al. [39] reviewed the experimental and quasi-experimental research trials on clinical and/or cost outcomes of worksite health promotion and disease management interventions, including a long term follow up of a comprehensive wellness program. The program offered health-risk assessments, online programs in nutrition, weight management and stress management, tobacco cessation programs, on-site nutrition and stress classes with coaching and access to a fitness centre. Long-term follow-up indicated cost reductions at four years with an ROI of $1.65 for every $1 invested. There was no data reported on stress management results, or level of participation.

There were four systematic reviews on physical activity interventions.[36, 38, 68, 37] Amlani et al. [36] evaluated the relationship between physical activity and sickness absence. One individual study included a mental health component. Physical exercise was compared to one hour of CBT per week on coping, stress, and nutrition. There was no effect on sickness absence. The second study included a weekly exercise class, muscle strengthening, stretching, classes regarding physical activity, nutrition and stress management. Compared to the "normal activity" control group, there was a negative effect on sickness absence for the intervention group. Conn et al.[38] also

investigated the effects of work-based physical activity interventions on physical behaviour, health and wellbeing, and workplace outcomes. They found mixed results in their meta-analysis on job stress, however there was a positive impact on sickness absence. Moderating impacts were found on workplace interventions that had input from participants. Given the meta-analysis approach and data available we were not able to identify individual study effects.

Pereira et al.[68] is the third study investigating the effects of exercise. This review included two studies investigating a weekly one-hour yoga intervention with a mindfulness intervention, and an intensive two-hour mindfulness session. Neither intervention resulted in improvements in productivity. Brown et al. (2011)[37] is the fourth study evaluating the impact of physical activity on employee well-being and presenteeism. Three individual studies were found that addressed wellness in the context of stress management and that included our primary outcomes. Two of the interventions included aerobic exercise as a component with educational information about lifestyle counselling, coping, and cognitive behavioural training (stress focused). The aerobic exercise component was at different doses in each intervention: 30 minutes per week, 60 minutes per week, or two one-hour sessions per week. Intervention durations ranged from 12 weeks to nine months. None of the studies impacted absenteeism. Only one study that used a productivity measure noted no impact on productivity. In the other two studies the workers in the intervention group perceived an improvement in subjective work situation, and general stress, however not job stress.

Based on our review, the literature investigating the impact of wellness programs on organizational outcomes seems divided. There are many studies investigating the impact on absenteeism, and a limited number of studies investigating the impact on cost or productivity. Most studies find positive or no effects on absence and productivity. Costs, however, appear to increase in 27% of the studies assessing this outcome. As noted, this may be due to increased utilization of wellness programs. Another observation is that exercise programs alone have little positive impact on our outcomes of interest. In comparison, programs that first involve employees in assessing personal risk factors, and then follow up with targeted wellness interventions have the most positive effects on absenteeism and productivity. It should be noted that the highest quality of evidence available suggests there may be a selection bias for these types of programs. As noted by Van Dongen et al.[45], when participants are assigned randomly to a treatment or control group, there is no difference on our outcomes of interest. This supports the conclusion that programs targeted to the needs of employees who are ready to change their health behaviours may create the largest benefit to organizations.

DISABILITY MANAGEMENT AND WORK ACCOMMODATION

This section reports only on the systematic reviews that focused on RTW, not all the studies that included RTW as an outcome measure. There were seven systematic reviews that focused specifically on disability management. While these are reported elsewhere, we felt it was important to combine these reviews in a way that their impact can be more clearly understood. Of the reviews reporting on disability management interventions, there were five high quality reviews[11, 47, 50-52] and 2 moderate rated reviews.[48, 49] Twenty-eight individual studies within the seven systematic reviews assess interventions impacting disability management. Of these, 27 reported positive impacts on absenteeism with one negative impact, nine reported a positive impact on cost with two reporting no impact, and two reported positive impacts on productivity.

	Absenteeism 28 studies	Cost 11 studies	Productivity 2 studies
Positive impact	96.5%	81.8%	100%
Negative impact	3.5%	0%	0%
No impact	0%	18.2%	0%

Franche et al.,[11] as noted in the job demands section, evaluated the effectiveness of workplace-based RTW interventions for workers with musculoskeletal and pain conditions. Although mental health studies as a primary condition were excluded, mental health was included as an outcome. They identified ten studies of adequate quality to be included. There were six studies that had psychosocial components and addressed our primary outcomes. There was strong, consistent evidence that offers of accommodation and contact with a health professional and the workplace reduced disability duration. There was mixed evidence on quality of life measures, general health, condition-specific functional status, symptom severity, and pain levels. As prolonged disability duration increases the risk of mental health disorders also increases.

Van Oostrom et al.[51] investigated the effectiveness of workplace interventions compared to usual care or clinical interventions on work-related outcomes and health outcomes. They also sought to evaluate whether the effects differ when applied to musculoskeletal disorders, mental health problems, or other health condition. They identified six randomized trials, five focused on musculoskeletal disorders, and only one on mental health. The pooled results only addressed the musculoskeletal disorders. For musculoskeletal disorders they found that workplace interventions were more effective than usual care to reduce sickness absence. In one intervention, a labour expert gave advice on work processes and provided suggestions on methods to lower the workload and job demands, and to enhance decision latitude. Other interventions included work-focused cognitive restructuring, sessions focused on work resumption, time-management, conflict handling and fatigue with targeted workplace assignments.

Van Vilsteren et al [52] investigated the effectiveness of workplace interventions in preventing work disability among sick-listed workers, when compared to usual care or clinical interventions. They included 14 studies, nine studies included workers with a variety of musculoskeletal disorders, and five studies included workers with mental health issues. The interaction and level of workplace engagement varied, as did the focus of the interventions. For example, one intervention was focused on major depressive disorders with a collaborative care approach involving a web-based tracking system, problem-solving, a self-help guide, medication and involvement of the worker, employer, occupational physician, care manager, and psychiatrist. Several of the musculoskeletal interventions had similar intervention characteristics impacting job control and job demands and involved higher levels of workplace engagement. One intervention involved the worker, supervisor, occupational physician and general practitioner. A worksite assessment was conducted, and work adjustments based on methods used in participatory ergonomics. Barriers to RTW were independently ranked by the worker and the supervisor. A team meeting was held to brainstorm possible solutions, including addressing conflicts between the occupational physician and general practitioner. Only one study included labour representatives and co-workers, in addition to other workplace stakeholders. Van Vilsteren et al.[52] concluded that there was moderate quality evidence that workplace interventions help workers return to work and reduce work duration of the initial RTW for workers with primary musculoskeletal disorders. This was not the case for workers with primary mental health disorders. The paucity of mental health workplace interventions studies with varied types of interventions, reduces the appropriateness of meta-analysis.

Tompa et al.[50] assessed the evidence on whether incremental investment in disability management interventions are cost-effective. They found moderate evidence supporting financial investment with the following features: early contact with the worker, contact between the employer and health care provider, work accommodation offers, worksite visits and using a RTW co-ordinator. Similarly, Shaw el al. [49] reviewed intervention studies where a RTW co-ordinator acted as a direct, on-site workplace liaison. They found that RTW interventions with RTW coordination have moderate to large effects on disability outcomes. They reported that RTW coordination can involve multiple activities. The most predominant activities center around assessing workplace factors, developing plans for transitional duties, and facilitating communication and agreement among stakeholders.

Gensby et al. [47] evaluated the effectiveness of workplace disability management programs implemented and practiced by employers. They suggested that large companies with capacity for in-house clinical/occupational services can improve the co-ordination of disability management services. Smaller organizations could potentially use external suppliers for onsite rehabilitation services. They noted that smaller organizations may also have fewer interpersonal and administrative barriers.

Kuoppala et al. [48] found that multimodal and multidisciplinary rehabilitation programs that are work-related can reduce sickness absence. For workers with low back pain, early rehabilitation with a psychological component may decrease both absenteeism and disability pension. Early

intervention such as education, counselling, exercise and ergonomics may improve worker's work ability at an early stage of disease.

Workplace accommodations are an integral aspect of disability management intervention. In fact, workplace accommodations are arguably the most important, versatile and well-used stay-at-work/return-to-work intervention available. While many employers think of work accommodations as ergonomics, the range of available accommodations goes well beyond changes in keyboard shape and position and workplace stakeholders have an increasing responsibility to investigate all possible accommodations in order to meet the standard of up to the point of undue hardship.

The quantity and consistency of evidence in this synthesis indicate that offers of job accommodation for injured workers reduce absenteeism and are cost-effective. The most successful programs are multimodal and include a broad range of stakeholders in the identification of barriers and facilitators for RTW, as well as accommodation planning and implementation. RTW coordinators can be particularly helpful when they are directly involved and able to coordinate at the worksite. However, most research regarding the effectiveness of job accommodation interventions has been completed with workers who have musculoskeletal injuries. And while accommodation of musculoskeletal conditions may also have a positive impact on employee mental health, there is insufficient evidence to know what types of interventions are most effective for employees with common mental health conditions. It may be that many simple and cost-effective interventions used for musculoskeletal conditions may also be effective for employees with depression or anxiety-related conditions. More research needs to be done to assess the organizational and individual impacts of common mental health accommodations such as flexible start times, control over breaks, or moving employees to a distraction-reduced environment.

DISCUSSION AND FUTURE DIRECTION

Our analysis focused on workplace interventions that address the primary work outcomes of sickness absence, disability-related costs, and work productivity. This synthesis focused on six risk factors that are predictors of work disability for general workers and those with mental health or other health conditions. The risk factors were agreed upon by stakeholders and included job demands, job control, social support, mental health symptomology, stress management, and general wellness. The research we found has many challenges, including the fact that many interventions have multiple components, and we are therefore not able to state precisely which components are associated with our outcomes of interest. However, we have identified evidentiary trends indicating that some types of interventions appear to be more robust than others and may reduce workplace stressors that are associated with prolonged work absence and low productivity.

The first trend is that there is consistent evidence demonstrating that interventions targeting primary physical and psychological stressors can improve work outcomes for general workers, workers at risk and workers with mental health and other chronic or episodic health conditions. It appears that addressing job stressors such as excessive or insufficient job demands and job control are necessary building blocks to improve social support, stress management, mental health and wellness. Job demands and job stress are mitigated by clear understanding of roles and responsibilities, and ongoing skill-based training related to those roles and responsibilities. Enhancing job control through job redesign is particularly important for workers with low job control. Examples of job control include perceived autonomy, control over safety, participation in decision-making, and control over workload (pacing, shift work selection, complexity of the project, vacation). Organizations that lack expertise in job design and work processes may wish to seek outside expertise to address fundamental issues that may be contributing to psychosocial hazards.

A second trend in the research is that interventions based on comprehensive employee needs-assessments and organizational risk profiles are more likely to have more positive impacts than experimental studies that fail to identify high priority individual or organizational needs. Intervention failures were often a result of not addressing felt-needs of workers, although there were also problems with poor communication, and poor implementation fidelity. Problems with implementation fidelity arose during periods of labour-management unrest, organizational mergers, or major structuring where there was limited input from employees. Many studies, regardless of the study design (randomized controlled trials, non-randomized controlled trials with control groups, and before and after interventions), lacked the collection of administrative data to account for normal variability across years. We recommend that organizations collect a minimum of three years of historical data in quarterly intervals to better understands trends and to help target risks.

A third trend strongly suggests participatory decision-making that leads to changes in work processes and job redesign, is a cost-effective way to improve workplace productivity and reduce sickness absence. Interventions that were solely management driven initiatives were less likely to produce desired work outcomes. This may be because participatory approaches often impact two or more risk factors (e.g. job control and social support). It may also be that they are more robust because the participatory process creates buy-in from both managers and workers. Many of the more successful participatory interventions used skilled outsider facilitators, clear terms of reference, standards for expected behaviour, and group processes that encouraged democratic and respectful communication to ensure that all team members had an opportunity to provide input.

Participatory processes are most effective when supported by creating structures, policies and processes that facilitate two-way communication and promote worker engagement in problem identification, problem clarification and problem resolution. Two-way communication and may also mitigate productivity losses associated with major anxiety producing events such as mergers and acquisitions.

A fourth trend supported by the literature is that providing both managers and their employees with training to improve communication skills, mental health awareness, conflict resolution and other job-related skills can positively impact organizational outcomes. Communication skills training includes active listening, motivational interviewing, understanding principles underlying cognitive behavioural therapy, problem solving, time management, and team-based problem-solving. There is also consistent evidence that skill-based training that addresses stress by improving employee ability to cope with job demands is more beneficial than passive techniques such as relaxation, meditation or mindfulness. Employers should also provide and encourage utilization of EAP services for workers at risk.

Finally, we find that for mental health and musculoskeletal health, there are some common physical and psychosocial stressors that can contribute to poor work outcomes. There is strong evidence that offering timely, meaningful and acceptable work accommodation in partnership with workers significantly reduces sickness absence. Interventions that provide case management, return to work co-ordination, and active support services to monitor progress and adjust work accommodation needs accordingly improve RTW, costs and productivity. While more research is needed to understand which interventions are most effective for employees with mental health conditions, the evidence suggests that offering modified duties that fit the employees work capacities and mitigate potential stressors is likely to have positive outcomes.

Organizations should provide access to evidence-informed occupational health services (onsite or nearby) for all workers returning to work or who have health conditions that could limit work participation. Many mental health-related absences are not related occupational injuries, and the evidence in this review suggests that using these services for all injury types reduces absenteeism and has a positive net benefit for most workplaces.

LIMITATIONS

There are important limitations to this report.

Given the very diverse literature base, with very different workplace interventions, instruments, and broad range of outcomes, a quantitative meta-analysis was not possible. Therefore, a best-evidence approach was used. A best-evidence synthesis can only provide descriptive reporting on the quality, quantity, and consistency of findings across studies. Since inclusion criteria was at the level of systematic reviews, the methodological screening was based on the quality of the systematic reviews, not the quality of individual studies. The quality of systematic review reflects how appropriately authors identify primary studies for inclusion, how well they report on the quality of the primary studies, and their level of confidence in overall findings and conclusions. Thus, a high-quality review may only have found and reported on low quality studies. In this report we have noted that most experimental studies in the workplace are pre- and post-designs, which would be considered low quality primary studies. Some reviews that include randomized controlled trials, or other higher quality experimental designs with controls. In our research summaries we note strengths and weaknesses of primary studies informing our chapter conclusions. Where there is insufficient information about primary study quality in the systematic reviews, we note that we can only report on the quantity and consistency of the outcomes. We also note deficiencies in primary studies that are reported by authors of the higher quality systematic reviews.

We used systematic reviews of the literature to identify primary studies that were relevant to our inclusion criteria and therefore we have missed primary studies that have not been included in systematic reviews. As per our inclusion criteria we only included primary studies that were experimental or quasi-experimental in design and addressed one or more of our primary work outcomes (absenteeism, costs or work productivity) as well as interventions addressing one of six risk factors (job control, job demands, social support, stress management, mental health and wellness). This eliminated many studies that did not address these outcomes of interest, though may have addressed other known risk factors, or improved other workplace (e.g. job satisfaction, motivation) or health outcomes. This could occur, for instance, in a study that was testing a stress management program which did not measure business outcomes associated with sickness absence, costs or productivity.

Most experimental studies in workplaces are pre and post design, some with a control group. There were few standardized outcome measures used across studies. Given these limitations we have used a best evidence synthesis approach looking at quality, quantity and consistency of results. Most workplace interventions regardless of their research design, typically lacked sufficient data collection at the administrative level or historical level to better understand historical trends and variability within their dataset to better control for potent confounders.

It is not possible to make definitive judgements on whether the specific components, the mixture of components, the number of components, or a combination of these factors is causing the intervention effect from a single study. By charting out intervention types and comparing and contrasting them across studies we are able to identify patterns and consider what types of

interventions, and components appear to be more robust than others to positively impact two or more risk factors of interest, and are less likely to have a negative business impact. It is possible that there may be alternative interpretations of the results given the inability to separate multi-component interventions.

As per our first key recommendation, it is critical to establish baseline data using multiple sources, and to refresh and renew this data at regular intervals to improve program evaluation, and its interpretation. We recommend that a minimum of 3 years of historical data be collected to better control for outcomes such as work absence which are known to be impacted by seasonality (discussed below), and to better understand the stability of baseline data.

To better inform our recommendations we also took note of deficiencies of primary studies noted in the higher quality systematic reviews. Our proposed framework of successful interventions incorporates strategies to improve the planning and reporting of workplace interventions. We have used two additional perspectives, the likelihood of negative effects, and to consider the potential value of making recommendations based on limited evidentiary support versus not making a recommendation. We therefore suggest that readers monitor the utilization of these recommendations carefully and evaluate their impact in the planning, implementation and post-implementation phases.

Where possible we have attempted to reduce duplication of results in tallying up included individual study results. It is possible that this has occurred during our abstraction process. The results tables therefore may not represent all primary studies of a given review, if they were addressed in a prior review. Where a systematic review provided no new studies we used the systematic review in considering our interpretation of results, however excluded the review as per our PRISMA flowchart.

A major problem with current literature is the failure to identify the risks and needs within a given workplace prior to program planning or initiating a planned action. We hope this review and recommendations will encourage stronger relationships among academics, researchers, employers, labour representatives, and program evaluators.

Knowledge Translation, Guides and Resources – Next Steps

Members of the academic community partnership are committed to submit a series of manuscripts arising from this project for peer-review. It is important that this body of work be submitted for peer-reviewed to strengthen credibility of the findings, and to support the utilization of planned tools and guides.

Timed with publication we are planning a number of knowledge translation activities. Working with our organization partners we plan to host a series of public access webinars on presenting the results of this body of work. We are also planning with stakeholder organizations and potential funders to host a provincial conference and series of “how to” workshops targeting employers and labour organizations on knowledge and skills to operationalize the proposed framework to create successful employer-labour management interventions to identify, prevent, and control work-related psychosocial hazards and social conditions contributing to mental

health disorders and prolonged work absence.

The conference and workshop will provide additional feedback to support further development of guides, tools and resources across different

APPENDICES

Contents

APPENDIX I – PICO STATEMENT

We went through two major iterations of the PICO Statement. The search strategy was based on the original most comprehensive PICO statement. The initial search strategy and PICO statement identified over 120 systematic reviews for inclusion which was not feasible.

To address issues of feasibility and do-ability the PICO statement was further refined and limited final abstraction to interventions that impacted common mental health symptomotology, job control, job demands, social support, stress management and wellness - health promotion.

Population

Workers are defined as working age (15-75) people who are employed, including those on disability for less than 6 months, with or without health conditions, illness or injuries. Population could include workers presenting with mild to moderately severe physical or common mental health symptoms, or illness excluding severe conditions such as traumatic brain injury, schizophrenia or severe psychosis, and large burns, specialized employment (not generalizable) or alternative work environments for special needs populations.

Intervention

Addressing modifiable workplace risk factors relevant to the identification, control, and prevention of work-related psychosocial hazards and social conditions contributing to mental health disorders and prolonged work absence**.**

Comparison

At the systematic review level, comparison groups not applicable. Primary research arising from the systematic reviews must be an experimental design and at a minimum be before and after.

Outcome

Work absence outcomes include return to work outcomes (e.g., rate of return to work, transition to disability pension), sick leave outcomes (ex. duration of sick leave, recurrence of sick leave), work productivity outcomes (e.g., work ability, work functioning) and, financial outcomes. Secondary outcomes include markers for changes in organizational culture (e.g. safety, job satisfaction, engagement, resilience).

Inclusion Criteria

- Studies:
  - Secondary research: Systematic reviews, meta-analyses (qualitative and quantitative) and other high level evidence-based synthesis studies
- Adults (age 15+) work-focused population
- Jurisdictions: Any
- Languages: English only
- Published: 2000-2016

Exclusion Criteria

- Non-English language publications

APPENDIX II – SEARCH STRATEGY

Medline

Database: Ovid MEDLINE(R) In-Process & Other `Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Run Feb 11, 2016

# ▲	Searches	Results
1	("long term disability" or "short term disability" or "disability leave*").tw.	1843
2	exp Insurance, Disability/ or "disability insurance".tw.	8552
3	"disability benefit*".tw.	667
4	Sick Leave/ or ("sick* leave" or "sickness absence").tw.	7211
5	(return* adj2 (work* or employ* or job*)).tw.	8783
6	((impair* adj2 (activit* or performance)) and (job or work* or employ*)).tw.	2120
7	((resum* or return*) adj2 (work* or employment)).tw.	9299
8	Employment/ and (return* or resum*).tw.	2378
9	"Employment, supported"/ or supported employment.tw.	1184
10	Absenteeism/ or absenteeism.tw.	9950
11	presenteeism.tw.	571
12	((work* or job) adj2 absen*).tw.	2530
13	((lost adj2 workday*) or (lost adj2 work day*)).tw.	508
14	((job or work or loss or lost or workday* or decrease*) adj2 (performance or	11938

	productiv*)).tw.	
15	((duration or frequency or length or recurrence or prevent*) adj2 ("sick* leave" or "sickness absence" or "work absence")).tw.	535
16	or/1-15 [OUTCOME 2012 TERMS]	48674
17	(review literature as topic or review).pt.	2063564
18	(medline or medlars or embase or pubmed or cochrane).tw,sh.	116002
19	(scisearch or psychinfo or psycinfo).tw,sh.	11144
20	(psychlit or psyclit).tw,sh.	881
21	cinahl.tw,sh.	13198
22	((hand adj2 search*) or (manual* adj2 search*)).tw,sh.	8659
23	(electronic database* or bibliographic database* or computeri?ed database* or online database*).tw,sh.	18758
24	(pooling or pooled or mantel haenszel).tw,sh.	64579
25	(peto or dersimonian or der simonian or fixed effect).tw,sh.	4273
26	(retraction of publication or retracted publication).pt.	8507
27	or/18-26	190236
28	17 and 27	89455
29	meta-analysis.pt.	61402
30	meta-analysis.sh.	61402
31	(meta-analys* or meta analys* or metaanalys*).tw,sh.	107654
32	(systematic* adj5 review*).tw,sh.	83613

33	(systematic* adj5 overview*).tw,sh.	1151
34	(quantitativ* adj5 review*).tw,sh.	5210
35	(quantitativ* adj5 overview*).tw,sh.	210
36	(quantitativ* adj5 synthesis*).tw,sh.	1591
37	(methodologic* adj5 review*).tw,sh.	3896
38	(methodologic* adj5 overview*).tw,sh.	272
39	(integrative research review* or research integration).tw.	101
40	or/29-39	167215
41	28 or 40 [SR FILTER]	206610
42	(exp Disabled Persons/ or disabilit*.tw. or illness.tw.) and (rehab* or treatment* or interven* or prevent*).tw.	131578
43	(chronic disease/ or Somatoform Disorders/ or illness.tw.) and (rehab* or treatment* or interven* or prevent*).tw.	140861
44	exp Disability Evaluations/ or (evaluat* adj2 disabilit*).tw.	43272
45	exp preventive medicine/	33885
46	Interpersonal Relations/ or "interpersonal relation*".tw.	62187
47	Social Distance/ or social distance.tw.	2266
48	Peer Group/ or (peer adj1 group*).tw.	16730
49	Internal-External Control/ or "locus of control".tw.	19186
50	Trust/	6656

51	Social Support/ or ("social support" or "family support" or "peer support").tw.	70016
52	Sick Role/ or "sick role*".tw.	11371
53	Illness Behavior/ or (illness behavior* or illness behaviour*).tw.	1875
54	Organizational Culture/ or ("organizational culture*" or "organisational culture*").tw.	14686
55	Workplace/ or (workplace or "work place" or "place of work").tw.	35873
56	Labor Unions/ or ("labor unions" or "labour unions").tw.	5638
57	Leadership/	33091
58	(supervisor* adj1 support*).tw.	440
59	Job Satisfaction/ or "job satisfaction".tw.	22211
60	("job strain*" or "job role*").tw.	1203
61	("physical* demand*" adj3 work).tw.	235
62	Attitude to Health/ or (attitude* adj1 health).tw.	76048
63	exp Health Behavior/ or (health behavior* or health behaviour*).tw.	141427
64	"Health Knowledge, Attitudes, Practice"/	80998
65	(health adj1 (knowledge or attitude* or practice* or practise*)).tw.	7428
66	exp Health Promotion/ or "health promotion*".tw. or exp health education/ or "health education".tw.	213777
67	exp Community Health Services/ or community health.tw.	268156
68	exp Education, Nonprofessional/ or ("nonprofessional education" or "non professional education").tw.	172787

69	exp Human Engineering/ or ergonom*.tw.	51706
70	Personnel Management/	15550
71	exp Rehabilitation, Vocational/ or "vocational rehab*".tw.	10019
72	("disability prevention" or (prevent* adj1 disabilit*)).tw.	662
73	Risk factors/ or "risk factor*".tw. or "protective factor*".tw.	822769
74	Exercise/ or (exercise or "physical fitness" or "physical activit*").tw.	267134
75	"Health Benefit Plans, Employee"/ or (("health benefit plan" or "health benefit plans") and employee*).tw.	9311
76	Occupational Health Services/ or occupational health.tw.	18771
77	or/42-76 [INTERVENTION 2012 TERMS]	2117797
78	(letter or comment or editorial).pt.	1454102
79	16 and 41 and 77 [OUTCOME + SR FILTER + INTERVENTION (2012 TERMS)]	831
80	79 not 78 [OUTCOME + SR FILTER + INTERVENTION (2012 TERMS) (+ LIMITS, SUBSTANTIVE)]	827
81	limit 80 to (english language and yr="2000 - 2012")	538
82	(16 and 41) not 79 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 TERMS)]	640
83	82 not 78 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 TERMS) (+ LIMITS, SUBSTANTIVE)]	633
84	limit 83 to (english language and yr="2000 - 2012")	372
85	((job or work* or employ*) adj3 (ability or functioning)).tw. [OUTCOME 2016	5824

	TERMS]	
86	((job or work* or employ*) adj3 (safety or engagement or reward or effort or demand or demands or imbalance or incentive* or resilient or resilience)).tw.	11702
87	("job security" or "job insecurity").tw.	834
88	("work control" or "job control" or "decision latitude" or "work influence").tw.	1314
89	Workload/	16873
90	("workload*" or "work-load*" or "work overload*" or "work over-load*").tw.	23528
91	("organizational change" or "organizational cultural change" or "organizational transformation" or "organizational cultural transformation" or "organisational change" or "organisational cultural change" or "organisational transformation" or "organisational cultural transformation").tw.	1400
92	("disability pension*" and transition*).tw.	37
93	*Depressive Disorder/pc, rh, th or *Depression/pc, rh, th	13109
94	*Anxiety Disorders/pc, rh, th or *Anxiety/pc, rh, th	6485
95	(depression or depressive or anxiety).ti. and (rehab* or treatment* or interven* or prevent*).tw.	46852
96	*"Stress, Psychological"/	57018
97	((job or work* or employ*) and (burnout* or burn-out* or strain or strains)).tw.	41892
98	Bullying/	1742
99	exp Prejudice/	24742
100	Social Discrimination/	413
101	Sexual Harassment/	1318

102	(bullying or discrimination or harass* or prejudice).tw.	91035
103	((workplace or work-place) and (mistreatment or abuse or insults or discourteous or discourtes* or disrespect* or threat* or humiliation* or coerce or coercion or manipulation or aggression or conflict* or violen* or victimization or victimisation)).tw.	2777
104	((workplace or work-place) and (incivility or rudeness or slights or sarcasm or mocking or disparag* or exclusion or excluding or justice or injustice)).tw.	477
105	Employee Grievances/	952
106	Work Schedule Tolerance/	5634
107	Staff Development/	7846
108	Communication/px	6
109	Employee Performance Appraisal/	4380
110	(psychological adj stress).tw.	5337
111	(abusive adj2 (supervision or supervisor*)).tw.	46
112	(grievance* or tolerance or communication or appraisal).tw.	348935
113	(antisocial or mob or mobbing or undermin* or "emotional abuse" or ostrac*).tw.	19279
114	((staff or employee) and development).tw.	14292
115	or/86-114 [INTERVENTION 2016 TERMS]	693799
116	16 or 85 [OUTCOME 2012 & 2016 TERMS]	53461
117	77 or 115 [INTERVENTION 2012 & 2016 TERMS]	2647697

118	116 and 41 and 117 [OUTCOME + SR FILTER + INTERVENTION (2012 & 2016 TERMS)]	950
119	118 not 78 [OUTCOME + SR FILTER + INTERVENTION (2012 & 2016 TERMS) (+ LIMITS, SUBSTANTIVE)]	946
120	limit 119 to (english language and yr="2000 - Current")	848
121	(116 and 41) not 118 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 & 2016 TERMS)]	614
122	121 not 78 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 & 2016 TERMS) (+ LIMITS, SUBSTANTIVE)]	606
123	limit 122 to (english language and yr="2000 - Current")	557
124	120 not 81 [OUTCOME + SR FILTER + INTERVENTION (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)]	310
125	123 not 84 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)]	233
126	(child* or adolescen* or preschool or pediatric* or paediatric* or "foster care" or "school-aged" or prenatal or antenatal or birth or births or newborn* or gestational or neonat* or infant or infants or "low birth weight").ti.	1146569
127	124 not 126	298
128	125 not 126	224
129	124 not 127 [TEST OF ELIMINATED ITEMS]	12
130	125 not 128 [TEST OF ELIMINATED ITEMS]	9
131	**remove duplicates from 127** [OUTCOME + SR FILTER + INTERVENTION (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)]	**295**

	DOWNLOADED 295 AFTER DUPLICATE REMOVAL	
132	**remove duplicates from 128** [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)] **DOWNLOADED 220 HITS AFTER DUPLICATE REMOVAL**	**221**

Results: 516 total, 488 unique
With interventions: 295 items [3400-3887] imported **268**, rest were dupes
Search ("Outcomes" AND "Interventions" AND "BMJ SR Filter"). 2016 update, searched 2012-2016.
Conducted Feb 11 2016.
Medline Ovid.
Without interventions: 838 items [3636-3885], imported **250**, rest were dupes
Search ("Outcomes" AND "Interventions" AND "BMJ SR Filter"). 2016 update with new terms and concepts.
Conducted Feb 11 2016.
Medline Ovid.

Embase-Medline

Database: Embase <1980 to 2016 February 01>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Run Feb 11 2016S

1	("long term disability" or "short term disability" or "disability leave*").tw.	4471
2	exp Insurance, Disability/ or "disability insurance".tw.	259055
3	"disability benefit*".tw.	1445
4	Sick Leave/ or ("sick* leave" or "sickness absence").tw.	14540
5	(return* adj2 (work* or employ* or job*)).tw.	19465
6	((impair* adj2 (activit* or performance)) and (job or work* or employ*)).tw.	5454
7	((resum* or return*) adj2 (work* or employment)).tw.	20630
8	Employment/ and (return* or resum*).tw.	4785
9	"Employment, supported"/ or supported employment.tw.	49435
10	Absenteeism/ or absenteeism.tw.	25341
11	presenteeism.tw.	1612
12	((work* or job) adj2 absen*).tw.	5942
13	((lost adj2 workday*) or (lost adj2 work day*)).tw.	1178
14	((job or work or loss or lost or workday* or decrease*) adj2 (performance or productiv*)).tw.	27603
15	((duration or frequency or length or recurrence or prevent*) adj2 ("sick* leave" or "sickness absence" or "work absence")).tw.	1149

16	or/1-15 [OUTCOME 2012 TERMS]	386530
17	(review literature as topic or review).pt.	4172746
18	(medline or medlars or embase or pubmed or cochrane).tw,sh.	266954
19	(scisearch or psychinfo or psycinfo).tw,sh.	24869
20	(psychlit or psyclit).tw,sh.	1842
21	cinahl.tw,sh.	28739
22	((hand adj2 search*) or (manual* adj2 search*)).tw,sh.	19028
23	(electronic database* or bibliographic database* or computeri?ed database* or online database*).tw,sh.	47733
24	(pooling or pooled or mantel haenszel).tw,sh.	150215
25	(peto or dersimonian or der simonian or fixed effect).tw,sh.	9803
26	(retraction of publication or retracted publication).pt.	8507
27	or/18-26	429808
28	17 and 27	170589
29	meta-analysis.pt.	61402
30	meta-analysis.sh.	165485
31	(meta-analys* or meta analys* or metaanalys*).tw,sh.	269329
32	(systematic* adj5 review*).tw,sh.	211447
33	(systematic* adj5 overview*).tw,sh.	2447
34	(quantitativ* adj5 review*).tw,sh.	24918
35	(quantitativ* adj5 overview*).tw,sh.	469

36	(quantitativ* adj5 synthesis*).tw,sh.	5279
37	(methodologic* adj5 review*).tw,sh.	8494
38	(methodologic* adj5 overview*).tw,sh.	599
39	(integrative research review* or research integration).tw.	215
40	or/29-39	428464
41	28 or 40 [SR FILTER]	502657
42	(exp Disabled Persons/ or disabilit*.tw. or illness.tw.) and (rehab* or treatment* or interven* or prevent*).tw.	311152
43	(chronic disease/ or Somatoform Disorders/ or illness.tw.) and (rehab* or treatment* or interven* or prevent*).tw.	287558
44	exp Disability Evaluations/ or (evaluat* adj2 disabilit*).tw.	45365
45	exp preventive medicine/	56119
46	Interpersonal Relations/ or "interpersonal relation*".tw.	139258
47	Social Distance/ or social distance.tw.	4240
48	Peer Group/ or (peer adj1 group*).tw.	33693
49	Internal-External Control/ or "locus of control".tw.	33983
50	Trust/	14919
51	Social Support/ or ("social support" or "family support" or "peer support").tw.	147743
52	Sick Role/ or "sick role*".tw.	61512
53	Illness Behavior/ or (illness behavior* or illness behaviour*).tw.	6119
54	Organizational Culture/ or ("organizational culture*" or "organisational culture*").tw.	122338
55	Workplace/ or (workplace or "work place" or "place of work").tw.	81794

56	Labor Unions/ or ("labor unions" or "labour unions").tw.	13883
57	Leadership/	76250
58	(supervisor* adj1 support*).tw.	920
59	Job Satisfaction/ or "job satisfaction".tw.	46663
60	("job strain*" or "job role*").tw.	2567
61	("physical* demand*" adj3 work).tw.	497
62	Attitude to Health/ or (attitude* adj1 health).tw.	164040
63	exp Health Behavior/ or (health behavior* or health behaviour*).tw.	446796
64	"Health Knowledge, Attitudes, Practice"/	148968
65	(health adj1 (knowledge or attitude* or practice* or practise*)).tw.	15507
66	exp Health Promotion/ or "health promotion*".tw. or exp health education/ or "health education".tw.	483194
67	exp Community Health Services/ or community health.tw.	385215
68	exp Education, Nonprofessional/ or ("nonprofessional education" or "non professional education").tw.	1306519
69	exp Human Engineering/ or ergonom*.tw.	173707
70	Personnel Management/	67072
71	exp Rehabilitation, Vocational/ or "vocational rehab*".tw.	18687
72	("disability prevention" or (prevent* adj1 disabilit*)).tw.	1529
73	Risk factors/ or "risk factor*".tw. or "protective factor*".tw.	1633786
74	Exercise/ or (exercise or "physical fitness" or "physical activit*").tw.	651270
75	"Health Benefit Plans, Employee"/ or (("health benefit plan" or "health benefit plans") and employee*).tw.	114277

76	Occupational Health Services/ or occupational health.tw.	38597
77	or/42-76 [INTERVENTION 2012 TERMS]	5297678
78	(letter or comment or editorial).pt.	2866378
79	16 and 41 and 77 [OUTCOME + SR FILTER + INTERVENTION (2012 TERMS)]	3401
80	79 not 78 [OUTCOME + SR FILTER + INTERVENTION (2012 TERMS) (+ LIMITS, SUBSTANTIVE)]	3350
81	limit 80 to (english language and yr="2000 - 2012")	2042
82	(16 and 41) not 79 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 TERMS)]	2632
83	82 not 78 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 TERMS) (+ LIMITS, SUBSTANTIVE)]	2585
84	limit 83 to (english language and yr="2000 - 2012")	1446
85	((job or work* or employ*) adj3 (ability or functioning)).tw. [OUTCOME 2016 TERMS]	13375
86	((job or work* or employ*) adj3 (safety or engagement or reward or effort or demand or demands or imbalance or incentive* or resilient or resilience)).tw.	25690
87	("job security" or "job insecurity").tw.	1739
88	("work control" or "job control" or "decision latitude" or "work influence").tw.	2747
89	Workload/	47695
90	("workload*" or "work-load*" or "work overload*" or "work over-load*").tw.	53354
91	("organizational change" or "organizational cultural change" or "organizational transformation" or "organizational cultural transformation" or "organisational change" or "organisational cultural change" or "organisational transformation" or "organisational cultural transformation").tw.	2948
92	("disability pension*" and transition*).tw.	76
93	*Depressive Disorder/pc, rh, th or *Depression/pc, rh, th	30523

94	*Anxiety Disorders/pc, rh, th or *Anxiety/pc, rh, th	8841
95	(depression or depressive or anxiety).ti. and (rehab* or treatment* or interven* or prevent*).tw.	110100
96	*"Stress, Psychological"/	82493
97	((job or work* or employ*) and (burnout* or burn-out* or strain or strains)).tw.	90972
98	Bullying/	5048
99	exp Prejudice/	25793
100	Social Discrimination/	3138
101	Sexual Harassment/	3232
102	(bullying or discrimination or harass* or prejudice).tw.	194365
103	((workplace or work-place) and (mistreatment or abuse or insults or discourteous or discourtes* or disrespect* or threat* or humiliation* or coerce or coercion or manipulation or aggression or conflict* or violen* or victimization or victimisation)).tw.	5953
104	((workplace or work-place) and (incivility or rudeness or slights or sarcasm or mocking or disparag* or exclusion or excluding or justice or injustice)).tw.	1029
105	Employee Grievances/	52474
106	Work Schedule Tolerance/	12037
107	Staff Development/	58312
108	Communication/px	6
109	Employee Performance Appraisal/	55902
110	(psychological adj stress).tw.	12369
111	(abusive adj2 (supervision or supervisor*)).tw.	84

112	(grievance* or tolerance or communication or appraisal).tw.	775087
113	(antisocial or mob or mobbing or undermin* or "emotional abuse" or ostrac*).tw.	42192
114	((staff or employee) and development).tw.	33652
115	or/86-114 [INTERVENTION 2016 TERMS]	1512383
116	16 or 85 [OUTCOME 2012 & 2016 TERMS]	397017
117	77 or 115 [INTERVENTION 2012 & 2016 TERMS]	6393142
118	116 and 41 and 117 [OUTCOME + SR FILTER + INTERVENTION (2012 & 2016 TERMS)]	3735
119	118 not 78 [OUTCOME + SR FILTER + INTERVENTION (2012 & 2016 TERMS) (+ LIMITS, SUBSTANTIVE)]	3684
120	limit 119 to (english language and yr="2000 - Current")	3357
121	(116 and 41) not 118 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 & 2016 TERMS)]	2497
122	121 not 78 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 & 2016 TERMS) (+ LIMITS, SUBSTANTIVE)]	2449
123	limit 122 to (english language and yr="2000 - Current")	2269
124	120 not 81 [OUTCOME + SR FILTER + INTERVENTION (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)]	1315
125	123 not 84 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)]	963
126	(child* or adolescen* or preschool or pediatric* or paediatric* or "foster care" or "school-aged" or prenatal or antenatal or birth or births or newborn* or gestational or neonat* or infant or infants or "low birth weight").ti.	2479692
127	remove duplicates from 124 [OUTCOME + SR FILTER + INTERVENTION (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)] **DOWNLOADED 794 AFTER DUPLICATE REMOVAL**	1101
128	from 127 keep 1-794	794
129	128 not 126	742

130	128 not 129 [TEST OF ELIMINATED ITEMS]	52
131	remove duplicates from 125 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)] **DOWNLOADED 571 HITS AFTER DUPLICATE REMOVAL**	801
132	from 131 keep 1-571	571

Results: 1365 total, 1263 unique

With interventions: 794 items [3888-4613] imported **726**, rest were dupes

Search ("Outcomes" AND "Interventions" AND "BMJ SR Filter"). 2016 update with new terms and concepts.

Conducted Feb 11 2016.

Embase Ovid.

Without interventions: 571 items [4614-5150] imported **537**, rest were dupes

Search ("Outcomes" AND "BMJ SR Filter" NOT "Interventions"); no overlap with "Interventions" set. 2016 update with new terms and concepts.

Conducted Feb 11 2016.

Embase Ovid.

CDSR-Embase-Medline

Database: EBM Reviews - Cochrane Database of Systematic Reviews <2005 to January 29, 2016>, Embase <1980 to 2016 February 01>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Run Feb 11, 2016

# ▲	Searches	Results
1	("long term disability" or "short term disability" or "disability leave*").tw.	4612

2	exp Insurance, Disability/ or "disability insurance".tw.	259056
3	"disability benefit*".tw.	1455
4	Sick Leave/ or ("sick* leave" or "sickness absence").tw.	14688
5	(return* adj2 (work* or employ* or job*)).tw.	19807
6	((impair* adj2 (activit* or performance)) and (job or work* or employ*)).tw.	5594
7	((resum* or return*) adj2 (work* or employment)).tw.	20976
8	Employment/ and (return* or resum*).tw.	4785
9	"Employment, supported"/ or supported employment.tw.	49448
10	Absenteeism/ or absenteeism.tw.	25518
11	presenteeism.tw.	1620
12	((work* or job) adj2 absen*).tw.	6165
13	((lost adj2 workday*) or (lost adj2 work day*)).tw.	1217
s	((job or work or loss or lost or workday* or decrease*) adj2 (performance or productiv*)).tw.	27937
15	((duration or frequency or length or recurrence or prevent*) adj2 ("sick* leave" or "sickness absence" or "work absence")).tw.	1177
16	or/1-15 [OUTCOME 2012 TERMS]	387588
17	(review literature as topic or review).pt.	4172746
18	(medline or medlars or embase or pubmed or cochrane).tw,sh.	276707
19	(scisearch or psychinfo or psycinfo).tw,sh.	26828

20	(psychlit or psyclit).tw,sh.	2055
21	cinahl.tw,sh.	32611
22	((hand adj2 search*) or (manual* adj2 search*)).tw,sh.	20760
23	(electronic database* or bibliographic database* or computeri?ed database* or online database*).tw,sh.	51290
24	(pooling or pooled or mantel haenszel).tw,sh.	156143
25	(peto or dersimonian or der simonian or fixed effect).tw,sh.	15745
26	(retraction of publication or retracted publication).pt.	8507
27	or/18-26	439562
28	17 and 27	170589
29	meta-analysis.pt.	61402
30	meta-analysis.sh.	165485
31	(meta-analys* or meta analys* or metaanalys*).tw,sh.	277125
32	(systematic* adj5 review*).tw,sh.	219379
33	(systematic* adj5 overview*).tw,sh.	2654
34	(quantitativ* adj5 review*).tw,sh.	25393
35	(quantitativ* adj5 overview*).tw,sh.	520
36	(quantitativ* adj5 synthesis*).tw,sh.	5659
37	(methodologic* adj5 review*).tw,sh.	11688
38	(methodologic* adj5 overview*).tw,sh.	661

39	(integrative research review* or research integration).tw.	231
40	or/29-39	437105
41	28 or 40 [SR FILTER]	511298
42	(exp Disabled Persons/ or disabilit*.tw. or illness.tw.) and (rehab* or treatment* or interven* or prevent*).tw.	315049
43	(chronic disease/ or Somatoform Disorders/ or illness.tw.) and (rehab* or treatment* or interven* or prevent*).tw.	289693
44	exp Disability Evaluations/ or (evaluat* adj2 disabilit*).tw.	45415
45	exp preventive medicine/	56119
46	Interpersonal Relations/ or "interpersonal relation*".tw.	139361
47	Social Distance/ or social distance.tw.	4242
48	Peer Group/ or (peer adj1 group*).tw.	33780
49	Internal-External Control/ or "locus of control".tw.	34018
50	Trust/	14919
51	Social Support/ or ("social support" or "family support" or "peer support").tw.	148112
52	Sick Role/ or "sick role*".tw.	61518
53	Illness Behavior/ or (illness behavior* or illness behaviour*).tw.	6144
54	Organizational Culture/ or ("organizational culture*" or "organisational culture*").tw.	122360
55	Workplace/ or (workplace or "work place" or "place of work").tw.	81995
56	Labor Unions/ or ("labor unions" or "labour unions").tw.	13885

57	Leadership/	76250
58	(supervisor* adj1 support*).tw.	927
59	Job Satisfaction/ or "job satisfaction".tw.	46703
60	("job strain*" or "job role*").tw.	2571
61	("physical* demand*" adj3 work).tw.	502
62	Attitude to Health/ or (attitude* adj1 health).tw.	164089
63	exp Health Behavior/ or (health behavior* or health behaviour*).tw.	447039
64	"Health Knowledge, Attitudes, Practice"/	148968
65	(health adj1 (knowledge or attitude* or practice* or practise*)).tw.	15765
66	exp Health Promotion/ or "health promotion*".tw. or exp health education/ or "health education".tw.	483642
67	exp Community Health Services/ or community health.tw.	385428
68	exp Education, Nonprofessional/ or ("nonprofessional education" or "non professional education").tw.	1306520
69	exp Human Engineering/ or ergonom*.tw.	173757
70	Personnel Management/	67072
71	exp Rehabilitation, Vocational/ or "vocational rehab*".tw.	18718
72	("disability prevention" or (prevent* adj1 disabilit*)).tw.	1582
73	Risk factors/ or "risk factor*".tw. or "protective factor*".tw.	1635867
74	Exercise/ or (exercise or "physical fitness" or "physical activit*").tw.	652889

75	"Health Benefit Plans, Employee"/ or (("health benefit plan" or "health benefit plans") and employee*).tw.	114278
76	Occupational Health Services/ or occupational health.tw.	38731
77	or/42-76 [INTERVENTION 2012 TERMS]	5303530
78	(letter or comment or editorial).pt.	2866378
79	16 and 41 and 77 [OUTCOME + SR FILTER + INTERVENTION (2012 TERMS)]	4294
80	79 not 78 [OUTCOME + SR FILTER + INTERVENTION (2012 TERMS) (+ LIMITS, SUBSTANTIVE)]	4243
81	limit 80 to (english language and yr="2000 - 2012") [Limit not valid in CDSR; records were retained]	2506
82	(16 and 41) not 79 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 TERMS)]	2779
83	82 not 78 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 TERMS) (+ LIMITS, SUBSTANTIVE)]	2732
84	limit 83 to (english language and yr="2000 - 2012") [Limit not valid in CDSR; records were retained]	1529
85	((job or work* or employ*) adj3 (ability or functioning)).tw. [OUTCOME 2016 TERMS]	13626
86	((job or work* or employ*) adj3 (safety or engagement or reward or effort or demand or demands or imbalance or incentive* or resilient or resilience)).tw.	25872
87	("job security" or "job insecurity").tw.	1745
88	("work control" or "job control" or "decision latitude" or "work influence").tw.	2760
89	Workload/	47695

90	("workload*" or "work-load*" or "work overload*" or "work over-load*").tw.	53565
91	("organizational change" or "organizational cultural change" or "organizational transformation" or "organizational cultural transformation" or "organisational change" or "organisational cultural change" or "organisational transformation" or "organisational cultural transformation").tw.	2978
92	("disability pension*" and transition*).tw.	77
93	*Depressive Disorder/pc, rh, th or *Depression/pc, rh, th	30523
94	*Anxiety Disorders/pc, rh, th or *Anxiety/pc, rh, th	8841
95	(depression or depressive or anxiety).ti. and (rehab* or treatment* or interven* or prevent*).tw.	110249
96	*"Stress, Psychological"/	82493
97	((job or work* or employ*) and (burnout* or burn-out* or strain or strains)).tw.	91511
98	Bullying/	5048
99	exp Prejudice/	25793
100	Social Discrimination/	3138
101	Sexual Harassment/	3232
102	(bullying or discrimination or harass* or prejudice).tw.	194554
103	((workplace or work-place) and (mistreatment or abuse or insults or discourteous or discourtes* or disrespect* or threat* or humiliation* or coerce or coercion or manipulation or aggression or conflict* or violen* or victimization or victimisation)).tw.	6093
104	((workplace or work-place) and (incivility or rudeness or slights or sarcasm or mocking or disparag* or exclusion or excluding or justice or injustice)).tw.	1201

105	Employee Grievances/	52474
106	Work Schedule Tolerance/	12037
107	Staff Development/	58312
108	Communication/px	6
109	Employee Performance Appraisal/	55902
110	(psychological adj stress).tw.	12428
111	(abusive adj2 (supervision or supervisor*)).tw.	84
112	(grievance* or tolerance or communication or appraisal).tw.	777891
113	(antisocial or mob or mobbing or undermin* or "emotional abuse" or ostrac*).tw.	42502
114	((staff or employee) and development).tw.	35022
115	or/86-114 [INTERVENTION 2016 TERMS]	1516593
116	16 or 85 [OUTCOME 2012 & 2016 TERMS]	398225
117	77 or 115 [INTERVENTION 2012 & 2016 TERMS]	6400061
118	116 and 41 and 117 [OUTCOME + SR FILTER + INTERVENTION (2012 & 2016 TERMS)]	4826
119	118 not 78 [OUTCOME + SR FILTER + INTERVENTION (2012 & 2016 TERMS) (+ LIMITS, SUBSTANTIVE)]	4775
120	limit 119 to (english language and yr="2000 - Current") [Limit not valid in CDSR; records were retained]	4443

121	(116 and 41) not 118 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 & 2016 TERMS)]	2593
122	121 not 78 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 & 2016 TERMS) (+ LIMITS, SUBSTANTIVE)]	2545
123	limit 122 to (english language and yr="2000 - Current") [Limit not valid in CDSR; records were retained]	2365
124	120 not 81 [OUTCOME + SR FILTER + INTERVENTION (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)] **DOWNLOADED 622 AFTER DUPLICATE REMOVAL**	1937
125	123 not 84 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)] **DOWNLOADED 47 AFTER DUPLICATE REMOVAL**	1010
126	(child* or adolescen* or preschool or pediatric* or paediatric* or "foster care" or "school-aged" or prenatal or antenatal or birth or births or newborn* or gestational or neonat* or infant or infants or "low birth weight").ti.	2481086
127	remove duplicates from 124	1723
128	from 127 keep 1-622	1723
129	128 not 126	574
130	128 not 129 [TEST OF ELIMINATED ITEMS]	48
131	remove duplicates from 125	848
132	from 131 keep 1-47	47

Results: 669 total, 656 unique

With interventions: 622 items [5151-5760] imported **610**, rest were dupes

Search ("Outcomes" AND "Interventions" AND "BMJ SR Filter"). 2016 update with new terms and concepts.

Conducted Feb 11 2016.

CDSR Ovid.

Without interventions: 47 items [5761-5806] imported **46**, rest were dupes

Search ("Outcomes" AND "BMJ SR Filter" NOT "Interventions"); no overlap with "Interventions" set. 2016 update with new terms and concepts.

Conducted Feb 11 2016.

DARE-CDSR-Embase-Medline

Database: EBM Reviews - Cochrane Database of Systematic Reviews <2005 to February 03, 2016>, EBM Reviews - Database of Abstracts of Reviews of Effects <2nd Quarter 2015>, Embase <1980 to 2016 February 04>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

1	("long term disability" or "short term disability" or "disability leave*").tw.	4618
2	exp Insurance, Disability/ or "disability insurance".tw.	259057
3	"disability benefit*".tw.	1459
4	Sick Leave/ or ("sick* leave" or "sickness absence").tw.	14765
5	(return* adj2 (work* or employ* or job*)).tw.	19979
6	((impair* adj2 (activit* or performance)) and (job or work* or employ*)).tw.	5597
7	((resum* or return*) adj2 (work* or employment)).tw.	21148
8	Employment/ and (return* or resum*).tw.	4785
9	"Employment, supported"/ or supported employment.tw.	49455
10	Absenteeism/ or absenteeism.tw.	25554

11	presenteeism.tw.	1621
12	((work* or job) adj2 absen*).tw.	6192
13	((lost adj2 workday*) or (lost adj2 work day*)).tw.	1228
14	((job or work or loss or lost or workday* or decrease*) adj2 (performance or productiv*)).tw.	27951
15	((duration or frequency or length or recurrence or prevent*) adj2 ("sick* leave" or "sickness absence" or "work absence")).tw.	1189
16	or/1-15 [OUTCOME 2012 TERMS]	387868
17	(review literature as topic or review).pt.	4172746
18	(medline or medlars or embase or pubmed or cochrane).tw,sh.	291115
19	(scisearch or psychinfo or psycinfo).tw,sh.	28879
20	(psychlit or psyclit).tw,sh.	2481
21	cinahl.tw,sh.	35665
22	((hand adj2 search*) or (manual* adj2 search*)).tw,sh.	21655
23	(electronic database* or bibliographic database* or computeri?ed database* or online database*).tw,sh.	52966
24	(pooling or pooled or mantel haenszel).tw,sh.	163928
25	(peto or dersimonian or der simonian or fixed effect).tw,sh.	20055
26	(retraction of publication or retracted publication).pt.	8507
27	or/18-26	454282
28	17 and 27	170589
29	meta-analysis.pt.	61402

30	meta-analysis.sh.	165485
31	(meta-analys* or meta analys* or metaanalys*).tw,sh.	297197
32	(systematic* adj5 review*).tw,sh.	252810
33	(systematic* adj5 overview*).tw,sh.	2736
34	(quantitativ* adj5 review*).tw,sh.	25701
35	(quantitativ* adj5 overview*).tw,sh.	529
36	(quantitativ* adj5 synthesis*).tw,sh.	5815
37	(methodologic* adj5 review*).tw,sh.	13878
38	(methodologic* adj5 overview*).tw,sh.	669
39	(integrative research review* or research integration).tw.	233
40	or/29-39	472822
41	28 or 40 [SR FILTER]	547015
42	(exp Disabled Persons/ or disabilit*.tw. or illness.tw.) and (rehab* or treatment* or interven* or prevent*).tw.	316795
43	(chronic disease/ or Somatoform Disorders/ or illness.tw.) and (rehab* or treatment* or interven* or prevent*).tw.	290861
44	exp Disability Evaluations/ or (evaluat* adj2 disabilit*).tw.	45519
45	exp preventive medicine/	56119
46	Interpersonal Relations/ or "interpersonal relation*".tw.	139442
47	Social Distance/ or social distance.tw.	4245

48	Peer Group/ or (peer adj1 group*).tw.	33835
49	Internal-External Control/ or "locus of control".tw.	34036
50	Trust/	14919
51	Social Support/ or ("social support" or "family support" or "peer support").tw.	148449
52	Sick Role/ or "sick role*".tw.	61523
53	Illness Behavior/ or (illness behavior* or illness behaviour*).tw.	6148
54	Organizational Culture/ or ("organizational culture*" or "organisational culture*").tw.	122376
55	Workplace/ or (workplace or "work place" or "place of work").tw.	82142
56	Labor Unions/ or ("labor unions" or "labour unions").tw.	13885
57	Leadership/	76250
58	(supervisor* adj1 support*).tw.	928
59	Job Satisfaction/ or "job satisfaction".tw.	46722
60	("job strain*" or "job role*").tw.	2571
61	("physical* demand*" adj3 work).tw.	503
62	Attitude to Health/ or (attitude* adj1 health).tw.	164297
63	exp Health Behavior/ or (health behavior* or health behaviour*).tw.	447344
64	"Health Knowledge, Attitudes, Practice"/	148968
65	(health adj1 (knowledge or attitude* or practice* or practise*)).tw.	16293
66	exp Health Promotion/ or "health promotion*".tw. or exp health education/ or "health education".tw.	484472
67	exp Community Health Services/ or community health.tw.	385617

68	exp Education, Nonprofessional/ or ("nonprofessional education" or "non professional education").tw.	1306520
69	exp Human Engineering/ or ergonom*.tw.	173782
70	Personnel Management/	67072
71	exp Rehabilitation, Vocational/ or "vocational rehab*".tw.	18730
72	("disability prevention" or (prevent* adj1 disabilit*)).tw.	1591
73	Risk factors/ or "risk factor*".tw. or "protective factor*".tw.	1638703
74	Exercise/ or (exercise or "physical fitness" or "physical activit*").tw.	655229
75	"Health Benefit Plans, Employee"/ or (("health benefit plan" or "health benefit plans") and employee*).tw.	114279
76	Occupational Health Services/ or occupational health.tw.	38825
77	or/42-76 [INTERVENTION 2012 TERMS]	5311054
78	(letter or comment or editorial).pt.	2866378
79	16 and 41 and 77 [OUTCOME + SR FILTER + INTERVENTION (2012 TERMS)]	4443
80	79 not 78 [OUTCOME + SR FILTER + INTERVENTION (2012 TERMS) (+ LIMITS, SUBSTANTIVE)]	4392
81	limit 80 to (english language and yr="2000 - 2012") [Limit not valid in CDSR,DARE; records were retained]	2655
82	(16 and 41) not 79 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 TERMS)]	2882
83	82 not 78 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 TERMS) (+ LIMITS, SUBSTANTIVE)]	2835
84	limit 83 to (english language and yr="2000 - 2012") [Limit not valid in CDSR,DARE; records were retained]	1632
85	((job or work* or employ*) adj3 (ability or functioning)).tw. [OUTCOME 2016 TERMS]	13664

86	((job or work* or employ*) adj3 (safety or engagement or reward or effort or demand or demands or imbalance or incentive* or resilient or resilience)).tw.	25909
87	("job security" or "job insecurity").tw.	1745
88	("work control" or "job control" or "decision latitude" or "work influence").tw.	2761
89	Workload/	47695
90	("workload*" or "work-load*" or "work overload*" or "work over-load*").tw.	53620
91	("organizational change" or "organizational cultural change" or "organizational transformation" or "organizational cultural transformation" or "organisational change" or "organisational cultural change" or "organisational transformation" or "organisational cultural transformation").tw.	2985
92	("disability pension*" and transition*).tw.	77
93	*Depressive Disorder/pc, rh, th or *Depression/pc, rh, th	30523
94	*Anxiety Disorders/pc, rh, th or *Anxiety/pc, rh, th	8841
95	(depression or depressive or anxiety).ti. and (rehab* or treatment* or interven* or prevent*).tw.	110943
96	*"Stress, Psychological"/	82493
97	((job or work* or employ*) and (burnout* or burn-out* or strain or strains)).tw.	91548
98	Bullying/	5048
99	exp Prejudice/	25793
100	Social Discrimination/	3138
101	Sexual Harassment/	3232
102	(bullying or discrimination or harass* or prejudice).tw.	194607

103	((workplace or work-place) and (mistreatment or abuse or insults or discourteous or discourtes* or disrespect* or threat* or humiliation* or coerce or coercion or manipulation or aggression or conflict* or violen* or victimization or victimisation)).tw.	6118
104	((workplace or work-place) and (incivility or rudeness or slights or sarcasm or mocking or disparag* or exclusion or excluding or justice or injustice)).tw.	1230
105	Employee Grievances/	52474
106	Work Schedule Tolerance/	12037
107	Staff Development/	58312
108	Communication/px	6
109	Employee Performance Appraisal/	55902
110	(psychological adj stress).tw.	12436
111	(abusive adj2 (supervision or supervisor*)).tw.	84
112	(grievance* or tolerance or communication or appraisal).tw.	779104
113	(antisocial or mob or mobbing or undermin* or "emotional abuse" or ostrac*).tw.	42615
114	((staff or employee) and development).tw.	35106
115	or/86-114 [INTERVENTION 2016 TERMS]	1518804
116	16 or 85 [OUTCOME 2012 & 2016 TERMS]	398523
117	77 or 115 [INTERVENTION 2012 & 2016 TERMS]	6408880
118	116 and 41 and 117 [OUTCOME + SR FILTER + INTERVENTION (2012 & 2016 TERMS)]	4997
119	118 not 78 [OUTCOME + SR FILTER + INTERVENTION (2012 & 2016 TERMS) (+ LIMITS, SUBSTANTIVE)]	4946

120	limit 119 to (english language and yr="2000 - Current") [Limit not valid in CDSR,DARE; records were retained]	4614
121	(116 and 41) not 118 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 & 2016 TERMS)]	2690
122	121 not 78 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (2012 & 2016 TERMS) (+ LIMITS, SUBSTANTIVE)]	2642
123	limit 122 to (english language and yr="2000 - Current") [Limit not valid in CDSR,DARE; records were retained]	2462
124	120 not 81 [OUTCOME + SR FILTER + INTERVENTION (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)] **DOWNLOADED 22 AFTER DUPLICATE REMOVAL**	1959
125	123 not 84 [OUTCOME + SR FILTER + (WITHOUT INTERVENTION ITEMS) (+ LIMITS, SUBSTANTIVE, 2016 NEW ITEMS)] DOWNLOADED 1 AFTER DUPLICATE REMOVAL	1011
126	(child* or adolescen* or preschool or pediatric* or paediatric* or "foster care" or "school-aged" or prenatal or antenatal or birth or births or newborn* or gestational or neonat* or infant or infants or "low birth weight").ti.	2483730
127	remove duplicates from 124	1745
128	from 127 keep 623-644	22
129	remove duplicates from 125	849
130	from 129 keep 48	1

Results: 23 total, 23 unique

With interventions: 22 items [5807-5828] imported **22**, no dupes

Search ("Outcomes" AND "Interventions" AND "BMJ SR Filter"). 2016 update with new terms and concepts.

Conducted Feb 11 2016.

DARE Ovid.

Without interventions: 1 items [5829] imported **1**, no dupes

Search ("Outcomes" AND "BMJ SR Filter" NOT "Interventions"); no overlap with "Interventions" set. 2016 update with new terms and concepts.

Conducted Feb 11 2016.

DARE Ovid.CINAHL

1	TI ("long term disability" OR "short term disability" OR "disability leave*") OR AB ("long term disability" OR "short term disability" OR "disability leave*")	Search modes - Boolean/Phrase	648
2	(MH "Insurance, Disability+") OR TI ("disability insurance") OR AB ("disability insurance")	Search modes - Boolean/Phrase	4,513
3	TI ("disability benefit*") OR AB ("disability benefit*")	Search modes - Boolean/Phrase	312
4	MH (Sick Leave) OR TI ("sick* leave" OR "sickness absence") OR AB ("sick* leave" OR "sickness absence")	Search modes - Boolean/Phrase	4,518
5	MH (Job Re-Entry) OR TI ((return* N2 work*) OR (return* N2 employ*) OR (return* N2 job*)) OR AB ((return* N2 work*) OR (return* N2 employ*) OR (return* N2 job*))	Search modes - Boolean/Phrase	6,754
6	TI (((impair* N2 activit*) OR (impair* N2 performance)) AND (job OR work* OR employ*)) OR AB (((impair* N2 activit*) OR (impair* N2 performance)) AND (job OR work* OR employ*))	Search modes - Boolean/Phrase	450

7	TI ((resum* N2 work*) OR (resum* N2 employment) OR (return* N2 work*) OR (return* N2 employment)) OR AB ((resum* N2 work*) OR (resum* N2 employment) OR (return* N2 work*) OR (return* N2 employment))	Search modes - Boolean/Phrase	3,953
8	MH (Employment) AND (TI (return* OR resum*) OR AB (return* OR resum*))	Search modes - Boolean/Phrase	556
9	(MH "Employment, Supported") OR TI ("supported employment") OR AB ("supported employment")	Search modes - Boolean/Phrase	1,109
10	MH (Absenteeism) OR TI (absenteeism) OR AB (absenteeism)	Search modes - Boolean/Phrase	4,106
11	TI (presenteeism) OR AB (presenteeism)	Search modes - Boolean/Phrase	299
12	TI ((work N2 absen*) OR (job N2 absen*)) OR AB ((work N2 absen*) OR (job N2 absen*))	Search modes - Boolean/Phrase	836
13	TI ((duration OR frequency OR length OR recurrence or prevent*) N2 ("sick* leave" OR "sickness absence" OR "work absence")) OR AB ((duration OR frequency OR length OR recurrence or prevent*) N2 ("sick* leave" OR "sickness absence" OR "work absence"))	Search modes - Boolean/Phrase	220
14	TI ((length N2 "sick* leave") OR (length N2 "sickness absence") OR (length N2 "work absence")) OR AB ((length N2 "sick* leave") OR (length N2 "sickness absence") OR (length N2 "work absence"))	Search modes - Boolean/Phrase	32
15	TI ((job OR work OR loss OR lost OR workday* OR decrease*) N2 (performance OR productiv*)) OR AB ((job OR work OR loss OR lost OR workday* OR decrease*) N2 (performance OR productiv*))	Search modes - Boolean/Phrase	4,176

16	TI ((duration OR frequency OR length OR recurrence or prevent*) N2 ("sick* leave" OR "sickness absence" OR "work absence")) OR AB ((duration OR frequency OR length OR recurrence or prevent*) N2 ("sick* leave" OR "sickness absence" OR "work absence"))	Search modes - Boolean/Phrase	220
17	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16	Search modes - Boolean/Phrase	23,647
18	(MH "Literature Review+") OR (MH "Systematic Review")	Search modes - Boolean/Phrase	40,724
19	TI (medline or medlars or embase or pubmed or cochrane) OR AB (medline or medlars or embase or pubmed or cochrane)	Search modes - Boolean/Phrase	33,512
20	TI (scisearch or psychinfo or psycinfo) OR AB (scisearch or psychinfo or psycinfo)	Search modes - Boolean/Phrase	6,423
21	TI (psychlit or psyclit) OR AB (psychlit or psyclit)	Search modes - Boolean/Phrase	389
22	TI (cinahl) OR AB (cinahl)	Search modes - Boolean/Phrase	13,552
23	(MH "Reference Databases, Health+")	Search modes - Boolean/Phrase	44,821
24	TI ((hand N2 search*) or (manual* N2 search*)) OR AB ((hand N2 search*) or (manual* N2 search*))	Search modes - Boolean/Phrase	2,819
25	TI (("electronic database*" or "bibliographic database*" or "computeri?ed database*" or "online database*")) OR AB (("electronic database*" or "bibliographic database*" or "computeri?ed database*" or "online database*"))	Search modes - Boolean/Phrase	6,469
26	MH ("Mantel-Haenszel Test") or TI (pooling or pooled or "mantel haenszel") OR AB (pooling or pooled or "mantel haenszel")	Search modes - Boolean/Phrase	13,524

27	TI (peto or dersimonian or "der simonian" or "fixed effect") OR AB (peto or dersimonian or "der simonian" or "fixed effect")	Search modes - Boolean/Phrase	1,197
28	MH (("Retraction of Publication") or ("Retracted Publication")) OR TI (("retraction of publication") or ("retracted publication")) OR AB (("retraction of publication") or ("retracted publication"))	Search modes - Boolean/Phrase	376
29	S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28	Search modes - Boolean/Phrase	81,332
30	S18 and S29	Search modes - Boolean/Phrase	25,649
31	MH ("Meta Analysis")	Search modes - Boolean/Phrase	24,622
32	TI ("meta-analys*" or "meta analys*" or metaanalys*) OR AB ("meta-analys*" or "meta analys*" or metaanalys*)	Search modes - Boolean/Phrase	28,025
33	MH ("Systematic Review") OR TI (systematic* N5 review*) OR AB (systematic* N5 review*)	Search modes - Boolean/Phrase	62,186
34	TI (systematic* N5 review*) OR AB (systematic* N5 review*)	Search modes - Boolean/Phrase	45,136
35	TI (systematic* N5 overview*) OR AB (systematic* N5 overview*)	Search modes - Boolean/Phrase	381
36	TI (quantitativ* N5 review*) OR AB (quantitativ* N5 review*)	Search modes - Boolean/Phrase	1,010
37	TI (quantitativ* N5 overview*) OR AB (quantitativ* N5 overview*)	Search modes - Boolean/Phrase	36

38	TI (quantitativ* N5 synthes*) OR AB (quantitativ* N5 synthes*)	Search modes - Boolean/Phrase	301
39	TI (methodologic* N5 review*) OR AB (methodologic* N5 review*)	Search modes - Boolean/Phrase	1,484
40	TI (methodologic* N5 overview*) OR AB (methodologic* N5 overview*)	Search modes - Boolean/Phrase	72
41	TI ("integrative research review*" or "research integration") OR AB ("integrative research review*" or "research integration")	Search modes - Boolean/Phrase	70
42	S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41	Search modes - Boolean/Phrase	81,911
43	S30 or S42	Search modes - Boolean/Phrase	82,507
44	((MH "Disabled+") OR (MH "Employee, Disabled+") OR TI (disabilit* or illness) OR AB (disabilit* or illness)) AND (TI (rehab* or treatment* or interven* or prevent*) OR AB (rehab* or treatment* or interven* or prevent*))	Search modes - Boolean/Phrase	49,076
45	((MH "Chronic Disease") OR (MH " Somatoform Disorders+") OR TI (illness) OR AB (illness)) AND (TI (rehab* or treatment* or interven* or prevent*) OR AB (rehab* or treatment* or interven* or prevent*))	Search modes - Boolean/Phrase	35,274
46	(MH " Disability Evaluation+") OR TI (evaluat* N2 disabilit*) OR AB (evaluat* N2 disabilit*)	Search modes - Boolean/Phrase	12,549
47	MH (Preventive Health Care)	Search modes - Boolean/Phrase	15,132
48	(MH "Interpersonal Relations") OR TI ("interpersonal relation*") OR AB ("interpersonal relation*")	Search modes - Boolean/Phrase	33,450

49	TI ("social distance") OR AB ("social distance")	Search modes - Boolean/Phrase	208
50	MH (Peer Group) or TI (peer N1 group*) OR AB (peer N1 group*)	Search modes - Boolean/Phrase	9,130
51	MH ("Locus of Control") or TI ("locus of control") OR AB ("locus of control")	Search modes - Boolean/Phrase	4,646
52	MH (Trust)	Search modes - Boolean/Phrase	6,297
53	MH ("Support, Psychosocial") or TI ("social support" or "family support" or "peer support") OR AB ("social support" or "family support" or "peer support")	Search modes - Boolean/Phrase	55,520
54	MH (Sick Role) or TI ("sick role*") OR AB ("sick role*")	Search modes - Boolean/Phrase	1,296
55	TI ("illness behavior*" or "illness behaviour*") OR AB ("illness behavior*" or "illness behaviour*")	Search modes - Boolean/Phrase	296
56	MH (Organizational Culture) or TI ("organizational culture*" or "organisational culture*") OR AB ("organizational culture*" or "organisational culture*")	Search modes - Boolean/Phrase	13,902
57	MH (Work Environment) or TI (workplace or "work place" or "place of work") OR AB (workplace or "work place" or "place of work")	Search modes - Boolean/Phrase	32,485
58	MH (Labor Unions) or TI ("labor unions" or "labour unions") OR AB ("labor unions" or "labour unions")	Search modes - Boolean/Phrase	6,609
59	MH (Leadership)	Search modes - Boolean/Phrase	28,437
60	TI (supervisor* N1 support*) OR AB (supervisor* N1 support*)	Search modes - Boolean/Phrase	402

61	MH (Job Satisfaction) or TI ("job satisfaction") OR AB ("job satisfaction")	Search modes - Boolean/Phrase	16,182
62	TI ("job strain*" or "job role*") OR AB ("job strain*" or "job role*")	Search modes - Boolean/Phrase	574
63	TI ("physical* demand*" N3 work) OR AB ("physical* demand*" N3 work)	Search modes - Boolean/Phrase	93
64	MH (Attitude to Health) or TI (attitude* N1 health) or AB (attitude* N1 health)	Search modes - Boolean/Phrase	32,102
65	MH ("Health Behavior+") or TI (health behavior* or health behaviour*) or AB (health behavior* or health behaviour*)	Search modes - Boolean/Phrase	82,165
66	MH (Health Knowledge)	Search modes - Boolean/Phrase	19,249
67	TI (health N1 (knowledge or attitude* or practice* or practise*)) or AB (health N1 (knowledge or attitude* or practice* or practise*))	Search modes - Boolean/Phrase	10,592
68	MH (Health Promotion) OR MH ("health education+") or TI ("health promotion*" OR "health education") or AB ("health promotion*" OR "health education")	Search modes - Boolean/Phrase	142,557
69	MH ("Community Health Services+") or TI (community health) or AB (community health)	Search modes - Boolean/Phrase	330,577
70	MH ("Education, Nonprofessional+") or TI ("nonprofessional education" or "non professional education") or AB ("nonprofessional education" or "non professional education")	Search modes - Boolean/Phrase	109,277
71	MH ("Ergonomics+") or TI (ergonom*) or AB (ergonom*)	Search modes - Boolean/Phrase	19,712

72	MH (Personnel Management)	Search modes - Boolean/Phrase	6,474
73	MH ("Rehabilitation, Vocational") or TI ("vocational rehab*") or AB ("vocational rehab*")	Search modes - Boolean/Phrase	5,179
74	TI ("disability prevention" or (prevent* N1 disabilit*)) OR AB ("disability prevention" or (prevent* N1 disabilit*))	Search modes - Boolean/Phrase	521
75	MH ("Risk factors+") or TI ("risk factor*" or "protective factor*") or AB ("risk factor*" or "protective factor*")	Search modes - Boolean/Phrase	187,313
76	MH (Exercise/) or TI (exercise or "physical fitness" or "physical activit*") or AB (exercise or "physical fitness" or "physical activit*")	Search modes - Boolean/Phrase	103,963
77	TI (("health benefit plan" or "health benefit plans") and employee*) OR AB (("health benefit plan" or "health benefit plans") and employee*)	Search modes - Boolean/Phrase	5
78	MH ("Occupational Health Services+") or TI (occupational health) or AB (occupational health)	Search modes - Boolean/Phrase	12,970
79	S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62 or S63 or S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78	Search modes - Boolean/Phrase	923,047
80	ZT (commentary OR editorial OR letter OR "letter to the editor")	Search modes - Boolean/Phrase	521,577
81	S17 AND S43 AND S79	Search modes - Boolean/Phrase	457
82	S81 NOT S80	Search modes - Boolean/Phrase	450

83	(S17 AND S43) NOT S81	Search modes - Boolean/Phrase	274
84	S83 NOT S80	Search modes - Boolean/Phrase	266
85	S82	Limiters - Published Date: 20000101-20120831; English Language; Exclude MEDLINE records Search modes - Boolean/Phrase	62
86	S84	Limiters - Published Date: 20000101-20120831; English Language; Exclude MEDLINE records Search modes - Boolean/Phrase	29
87	TI ((job OR work* OR employ*) N3 (ability OR functioning)) OR AB ((job OR work* OR employ*) N3 (ability OR functioning))	Search modes - Boolean/Phrase	2,553
88	TI ((job OR work* OR employ*) N3 (safety OR engagement OR reward OR effort OR demand OR demands OR imbalance OR incentive* OR resilient OR resilience)) OR AB ((job OR work* OR employ*) N3 (safety OR engagement OR reward OR effort OR demand OR demands OR imbalance OR incentive* OR resilient OR resilience))	Search modes - Boolean/Phrase	7,530
89	TI ("job security" OR "job insecurity") OR AB ("job security" OR "job insecurity")	Search modes - Boolean/Phrase	547
90	TI ("work control" OR "job control" OR "decision latitude" OR "work influence") OR AB ("work control" OR "job control" OR "decision latitude" OR "work influence")	Search modes - Boolean/Phrase	534
91	(MH "Workload")	Search modes - Boolean/Phrase	10,423

92	TI ("workload*" OR "work-load*" OR "work overload*" OR "work over-load*") OR AB ("workload*" OR "work-load*" OR "work overload*" OR "work over-load*")	Search modes - Boolean/Phrase	7,236
93	TI ("organizational change" OR "organizational cultural change" OR "organizational transformation" OR "organizational cultural transformation" OR "organisational change" OR "organisational cultural change" OR "organisational transformation" OR "organisational cultural transformation")	Search modes - Boolean/Phrase	382
94	AB ("organizational change" OR "organizational cultural change" OR "organizational transformation" OR "organizational cultural transformation" OR "organisational change" OR "organisational cultural change" OR "organisational transformation" OR "organisational cultural transformation")	Search modes - Boolean/Phrase	763
95	TI ("disability pension*" AND transition*) OR AB ("disability pension*" AND transition*)	Search modes - Boolean/Phrase	16
96	(MM "Depression/PC/RH/TH")	Search modes - Boolean/Phrase	8,599
97	(MM "Anxiety/PC/RH/TH")	Search modes - Boolean/Phrase	2,604
98	TI (depression OR depressive OR anxiety) AND (TI (rehab* OR treatment* OR interven* OR prevent*) OR AB (rehab* OR treatment* OR interven* OR prevent*))	Search modes - Boolean/Phrase	14,601
99	(MM "Stress, Psychological") OR (MM "Stress, Occupational")	Search modes - Boolean/Phrase	24,635

100	TI ((job OR work* OR employ*) AND (burnout* OR burn-out* OR strain OR strains)) OR AB ((job OR work* OR employ*) AND (burnout* OR burn-out* OR strain OR strains))	Search modes - Boolean/Phrase	5,048
101	(MH "Bullying")	Search modes - Boolean/Phrase	4,813
102	(MH "Prejudice")	Search modes - Boolean/Phrase	4,338
103	(MH "Discrimination")	Search modes - Boolean/Phrase	8,009
104	(MH "Sexual Harassment")	Search modes - Boolean/Phrase	1,280
105	TI (bullying OR discrimination OR harass* OR prejudice) OR AB (bullying OR discrimination OR harass* OR prejudice)	Search modes - Boolean/Phrase	15,830
106	TI ((workplace OR work-place) AND (mistreatment OR abuse OR insults OR discourteous OR discourtes* OR disrespect* OR threat* OR humiliation* OR coerce OR coercion OR manipulation OR aggression OR conflict* OR violen* OR victimization OR victimization))	Search modes - Boolean/Phrase	1,027
107	AB ((workplace OR work-place) AND (mistreatment OR abuse OR insults OR discourteous OR discourtes* OR disrespect* OR threat* OR humiliation* OR coerce OR coercion OR manipulation OR aggression OR conflict* OR violen* OR victimization OR victimization))	Search modes - Boolean/Phrase	1,345
108	TI ((workplace OR work-place) AND (incivility OR rudeness OR slights OR sarcasm OR mocking OR disparag* OR exclusion OR excluding OR justice OR injustice)) OR AB ((workplace OR work-place) AND (incivility OR rudeness OR slights OR sarcasm OR mocking OR disparag* OR exclusion OR excluding OR justice OR injustice)	Search modes - Boolean/Phrase	310

109	(MH "Employee Grievances")	Search modes - Boolean/Phrase	541
110	(MH "Staff Development")	Search modes - Boolean/Phrase	23,522
111	(MM "Communication") AND (TI (workplace OR work-place OR psychology) OR AB (workplace OR work-place OR psychology))	Search modes - Boolean/Phrase	174
112	(MH "Employee Performance Appraisal")	Search modes - Boolean/Phrase	2,261
113	TI (psychological N1 stress) OR AB (psychological N1 stress)	Search modes - Boolean/Phrase	1,362
114	TI (abusive N2 (supervision OR supervisor*)) OR AB (abusive N2 (supervision OR supervisor*))	Search modes - Boolean/Phrase	37
115	TI (grievance* OR tolerance OR communication OR appraisal) OR AB (grievance* OR tolerance OR communication OR appraisal)	Search modes - Boolean/Phrase	73,759
116	TI (antisocial OR mob OR mobbing OR undermin* OR "emotional abuse" OR ostrac*) OR AB (antisocial OR mob OR mobbing OR undermin* OR "emotional abuse" OR ostrac*)	Search modes - Boolean/Phrase	5,203
117	TI ((staff OR employee) AND development) OR AB ((staff OR employee) AND development)	Search modes - Boolean/Phrase	8,919
118	S88 OR S89 OR S90 OR S91 OR S92 OR S93 OR S94 OR S95 OR S96 OR S97 OR S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110 OR S111 OR S112 OR S113 OR S114 OR S115 OR S116 OR S117	Search modes - Boolean/Phrase	203,798
119	S17 OR S87	Search modes - Boolean/Phrase	25,585

120	S79 OR S118	Search modes - Boolean/Phrase	1,049,794
121	S119 AND S43 AND S120	Search modes - Boolean/Phrase	520
122	S121 NOT S80	Search modes - Boolean/Phrase	512
123	(S119 AND S43) NOT S121	Search modes - Boolean/Phrase	251
124	S123 NOT S80	Search modes - Boolean/Phrase	242
125	S122	Limiters - Published Date: 20000101-20161231; English Language; Exclude MEDLINE records Search modes - Boolean/Phrase	125
126	S124	Limiters - Published Date: 20000101-20161231; English Language; Exclude MEDLINE records Search modes - Boolean/Phrase	40
127	S125 NOT S85 **DOWNLOADED**	Search modes - Boolean/Phrase	13
128	S126 NOT S86	Search modes - Boolean/Phrase	0

Results: 13 total, 13 unique
With interventions: 13 items [5830-5842]
Search ("Outcomes" AND "Interventions" AND "BMJ SR Filter"). Conducted Feb 12 2016.
CINAHL EbscoHost.
Without interventions:0 items
Search ("Outcomes" AND "BMJ SR Filter" NOT "Interventions"); no overlap with "Interventions" set. Conducted Feb 12 2016.
CINAHL EbscoHost.

PsychINFO

1	TI ("long term disability" OR "short term disability" OR "disability leave*") OR AB ("long term disability" OR "short term disability" OR "disability leave*")	Search modes - Boolean/Phrase	520
2	TI ("long term disability" OR "short DE ("Workers' Compensation Insurance ") OR TI ("disability insurance") OR AB ("disability insurance") disability" OR "disability leave*") OR AB ("long term disability" OR "short term disability" OR "disability leave*")	Search modes - Boolean/Phrase	516
3	TI ("disability benefit*") OR AB ("disability benefit*")	Search modes - Boolean/Phrase	388
4	TI ("sick* leave" OR "sickness absence") OR AB ("sick* leave" OR "sickness absence")	Search modes - Boolean/Phrase	1,695
5	TI (((impair* N2 activit*) OR (impair* N2 performance)) AND (job OR work* OR employ*)) OR AB (((impair* N2 activit*) OR (impair* N2 performance)) AND (job OR work* OR employ*))	Search modes - Boolean/Phrase	1,667
6	TI ((resum* N2 work*) OR (resum* N2 employment) OR (return* N2 work*) OR (return* N2 employment)) OR AB ((resum* N2 work*) OR (resum* N2 employment) OR (return* N2 work*) OR (return* N2 employment))	Search modes - Boolean/Phrase	3,077
7	DE ("Employment Status") AND (TI (return* OR resum*) OR AB (return* OR resum*))	Search modes - Boolean/Phrase	664

8	DE (Disability Management) OR TI ((return* N2 work*) OR (return* N2 employ*) OR (return* N2 job*)) OR AB ((return* N2 work*) OR (return* N2 employ*) OR (return* N2 job*))	Search modes - Boolean/Phrase	3,317
9	DE ("Supported Employment") OR TI ("supported employment") OR AB ("supported employment")	Search modes - Boolean/Phrase	1,628
10	DE (Employee Absenteeism) OR TI (absenteeism) OR AB (absenteeism)	Search modes - Boolean/Phrase	4,039
11	TI (presenteeism) OR AB (presenteeism)	Search modes - Boolean/Phrase	295
12	TI ((work N2 absen*) OR (job N2 absen*)) OR AB ((work N2 absen*) OR (job N2 absen*))	Search modes - Boolean/Phrase	1,361
13	TI ((duration OR frequency OR length OR recurrence or prevent*) N2 ("sick* leave" OR "sickness absence" OR "work absence")) OR AB ((duration OR frequency OR length OR recurrence or prevent*) N2 ("sick* leave" OR "sickness absence" OR "work absence"))	Search modes - Boolean/Phrase	172
14	TI ((length N2 "sick* leave") OR (length N2 "sickness absence") OR (length N2 "work absence")) OR AB ((length N2 "sick* leave") OR (length N2 "sickness absence") OR (length N2 "work absence"))	Search modes - Boolean/Phrase	31
15	TI ((job OR work OR loss OR lost OR workday* OR decrease*) N2 (performance OR productiv*)) OR AB ((job OR work OR loss OR lost OR workday* OR decrease*) N2 (performance OR productiv*))	Search modes - Boolean/Phrase	15,083
16	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15	Search modes - Boolean/Phrase	27,297

17	DE ("Literature Review")	Search modes - Boolean/Phrase	22,228
18	TI (medline or medlars or embase or pubmed or cochrane) OR AB (medline or medlars or embase or pubmed or cochrane)	Search modes - Boolean/Phrase	14,190
19	TI (scisearch or psychinfo or psycinfo) OR AB (scisearch or psychinfo)	Search modes - Boolean/Phrase	1,119
20	TI (cinahl) OR AB (cinahl)	Search modes - Boolean/Phrase	2,827
21	TI (psychlit or psyclit) OR AB (psychlit or psyclit)	Search modes - Boolean/Phrase	493
22	DE (Databases)	Search modes - Boolean/Phrase	3,132
23	TI ((hand N2 search*) or (manual* N2 search*)) OR AB ((hand N2 search*) or (manual* N2 search*))	Search modes - Boolean/Phrase	1,639
24	TI (("electronic database*" or "bibliographic database*" or "computeri?ed database*" or "online database*")) OR AB (("electronic database*" or "bibliographic database*" or "computeri?ed database*" or "online database*"))	Search modes - Boolean/Phrase	3,587
25	TI (pooling or pooled or "mantel haenszel") OR AB (pooling or pooled or "mantel haenszel")	Search modes - Boolean/Phrase	7,576
26	TI (peto or dersimonian or "der simonian" or "fixed effect") OR AB (peto or dersimonian or "der simonian" or "fixed effect")	Search modes - Boolean/Phrase	492
27	TI (("retraction of publication") or ("retracted publication")) OR AB (("retraction of publication") or ("retracted publication"))	Search modes - Boolean/Phrase	0

28	S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27	Search modes - Boolean/Phrase	27,124
29	S17 and s28	Search modes - Boolean/Phrase	281
30	DE ("Meta Analysis")	Search modes - Boolean/Phrase	3,786
31	TI ("meta-analys*" or "meta analys*" or metaanalys*) OR AB ("meta-analys*" or "meta analys*" or metaanalys*)	Search modes - Boolean/Phrase	20,893
32	TI (systematic* N5 review*) OR AB (systematic* N5 review*)	Search modes - Boolean/Phrase	17,883
33	TI (systematic* N5 overview*) OR AB (systematic* N5 overview*)	Search modes - Boolean/Phrase	335
34	TI (quantitativ* N5 review*) OR AB (quantitativ* N5 review*)	Search modes - Boolean/Phrase	1,747
35	TI (quantitativ* N5 overview*) OR AB (quantitativ* N5 overview*)	Search modes - Boolean/Phrase	90
36	TI (quantitativ* N5 synthes*) OR AB (quantitativ* N5 synthes*)	Search modes - Boolean/Phrase	546
37	TI (methodologic* N5 review*) OR AB (methodologic* N5 review*)	Search modes - Boolean/Phrase	2,718
38	TI (methodologic* N5 overview*) OR AB (methodologic* N5 overview*)	Search modes - Boolean/Phrase	316
39	TI ("integrative research review*" or "research integration") OR AB ("integrative research review*" or "research integration")	Search modes - Boolean/Phrase	99

40	s30 or S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39	Search modes - Boolean/Phrase	39,355
41	s29 OR s40	Search modes - Boolean/Phrase	39,497
42	((DE "Disabled Personnel") OR TI (disabilit* or illness) OR AB (disabilit* or illness)) AND (TI (rehab* or treatment* or interven* or prevent*) OR AB (rehab* or treatment* or interven* or prevent*))	Search modes - Boolean/Phrase	81,227
43	((DE "Chronic Illness+") OR (DE " Somatoform Disorders+") OR TI (illness) OR AB (illness)) AND (TI (rehab* or treatment* or interven* or prevent*) OR AB (rehab* or treatment* or interven* or prevent*))	Search modes - Boolean/Phrase	50,485
44	(DE " Disability Evaluation") OR TI (evaluat* N2 disabilit*) OR AB (evaluat* N2 disabilit*)	Search modes - Boolean/Phrase	1,231
45	DE (Preventive Medicine)	Search modes - Boolean/Phrase	1,919
46	DE ("Interpersonal Relationships") OR TI ("interpersonal relation*") OR AB ("interpersonal relation*")	Search modes - Boolean/Phrase	23,184
47	TI ("social distance") OR AB ("social distance")	Search modes - Boolean/Phrase	1,926
48	DE (Peer Relations) or TI (peer N1 group*) OR AB (peer N1 group*)	Search modes - Boolean/Phrase	19,012
49	DE ("Internal External Locus of Control") OR TI ("locus of control") OR AB ("locus of control")	Search modes - Boolean/Phrase	17,453
50	DE (“Trust (Social Behavior)”)	Search modes - Boolean/Phrase	7,622

51	DE ("Social Support") or TI ("social support" or "family support" or "peer support") OR AB ("social support" or "family support" or "peer support")	Search modes - Boolean/Phrase	51,927
52	TI ("sick role*") OR AB ("sick role*")	Search modes - Boolean/Phrase	447
53	DE (Illness Behavior) or TI ("illness behavior*" or "illness behaviour*") OR AB ("illness behavior*" or "illness behaviour*")	Search modes - Boolean/Phrase	3,541
54	DE (Organizational Climate) or TI ("organizational culture*" or "organisational culture*") OR AB ("organizational culture*" or "organisational culture*")	Search modes - Boolean/Phrase	11,895
55	TI (workplace or "work place" or "place of work") OR AB (workplace or "work place" or "place of work")	Search modes - Boolean/Phrase	26,743
56	DE (Labor Unions) or TI ("labor unions" or "labour unions") OR AB ("labor unions" or "labour unions")	Search modes - Boolean/Phrase	1,501
57	DE (Leadership)	Search modes - Boolean/Phrase	24,246
58	TI (supervisor* N1 support*) OR AB (supervisor* N1 support*)	Search modes - Boolean/Phrase	1,356
59	DE (Job Satisfaction) or TI ("job satisfaction") OR AB ("job satisfaction")	Search modes - Boolean/Phrase	20,304
60	TI ("job strain*" or "job role*") OR AB ("job strain*" or "job role*")	Search modes - Boolean/Phrase	1,017
61	TI ("physical* demand*" N3 work) OR AB ("physical* demand*" N3 work)	Search modes - Boolean/Phrase	102
62	TI (attitude* N1 health) or AB (attitude* N1 health)	Search modes - Boolean/Phrase	1,745

63	DE ("Health Behavior+") or TI (health behavior* or health behaviour*) or AB (health behavior* or health behaviour*)	Search modes - Boolean/Phrase	21,717
64	DE (Health Knowledge)	Search modes - Boolean/Phrase	6,267
65	TI (health N1 (knowledge or attitude* or practice* or practise*)) or AB (health N1 (knowledge or attitude* or practice* or practise*))	Search modes - Boolean/Phrase	9,562
66	DE (Health Promotion) OR DE ("Health Education+") or TI ("health promotion*" OR "health education") or AB ("health promotion*" OR "health education")	Search modes - Boolean/Phrase	28,484
67	TI (community health) or AB (community health)	Search modes - Boolean/Phrase	15,376
68	DE ("Human Factors Engineering") or TI (ergonom*) or AB (ergonom*)	Search modes - Boolean/Phrase	7,923
69	DE (Human Resource Management)	Search modes - Boolean/Phrase	9,252
70	DE ("Rehabilitation, Vocational+") or TI ("vocational rehab*") or AB ("vocational rehab*")	Search modes - Boolean/Phrase	3,139
71	TI ("disability prevention" or (prevent* N1 disabilit*)) OR AB ("disability prevention" or (prevent* N1 disabilit*))	Search modes - Boolean/Phrase	463
72	DE ("Risk Factors") or TI ("risk factor*" or "protective factor*") or AB ("risk factor*" or "protective factor*")	Search modes - Boolean/Phrase	92,993
73	DE (Exercise) or TI (exercise or "physical fitness" or "physical activit*") or AB (exercise or "physical fitness" or "physical activit*")	Search modes - Boolean/Phrase	68,544

74	TI (("health benefit plan" or "health benefit plans") and employee*) OR AB (("health benefit plan" or "health benefit plans") and employee*)	Search modes - Boolean/Phrase	6
75	DE ("Occupational Health") or TI (occupational health) or AB (occupational health)	Search modes - Boolean/Phrase	2,947
76	s42 or s43 or s44 or s45 or s46 or s47 or s48 or s49 or s50 or s51 or s52 or s53 or s54 or s55 or s56 or s57 or s58 or s59 or s61 or s62 or s63 or s65 or s67 or s68 or s68 or s69 or s70 or s71 or s72 or s73 or s74 or s75	Search modes - Boolean/Phrase	462,811
77	(ZZ "column/opinion") or (ZZ "comment/reply") or (ZZ "editorial") or (ZZ "encyclopedia entry") or (ZZ "obituary") or (ZZ "poetry")	Search modes - Boolean/Phrase	156,492
78	S16 AND S41 AND S76	Search modes - Boolean/Phrase	253
79	S78 NOT S77	Search modes - Boolean/Phrase	243
80	(S16 AND S41) NOT S78	Search modes - Boolean/Phrase	391
81	S80 NOT S77	Search modes - Boolean/Phrase	374
82	S79	Limiters - Published Date: 20000101-20120831; English Search modes - Boolean/Phrase	134
83	S81	Limiters - Published Date: 20000101-20120831; English Search modes - Boolean/Phrase	190

84	TI ((job OR work* OR employ*) N3 (ability OR functioning)) OR AB ((job OR work* OR employ*) N3 (ability OR functioning))	Search modes - Boolean/Phrase	8,206
85	TI ((job OR work* OR employ*) N3 (safety OR engagement OR reward OR effort OR demand OR demands OR imbalance OR incentive* OR resilient OR resilience)) OR AB ((job OR work* OR employ*) N3 (safety OR engagement OR reward OR effort OR demand OR demands OR imbalance OR incentive* OR resilient OR resilience))	Search modes - Boolean/Phrase	16,969
86	TI ("job security" OR "job insecurity") OR AB ("job security" OR "job insecurity")	Search modes - Boolean/Phrase	1,558
87	TI ("work control" OR "job control" OR "decision latitude" OR "work influence") OR AB ("work control" OR "job control" OR "decision latitude" OR "work influence")	Search modes - Boolean/Phrase	1,156
88	DE "Work Load"	Search modes - Boolean/Phrase	2,354
89	TI ("workload*" OR "work-load*" OR "work overload*" OR "work over-load*") OR AB ("workload*" OR "work-load*" OR "work overload*" OR "work over-load*")	Search modes - Boolean/Phrase	6,872
90	TI ("organizational change" OR "organizational cultural change" OR "organizational transformation" OR "organizational cultural transformation" OR "organisational change" OR "organisational cultural change" OR "organisational transformation" OR "organisational cultural transformation")	Search modes - Boolean/Phrase	1,507

91	AB ("organizational change" OR "organizational cultural change" OR "organizational transformation" OR "organizational cultural transformation" OR "organisational change" OR "organisational cultural change" OR "organisational transformation" OR "organisational cultural transformation")	Search modes - Boolean/Phrase	3,898
92	TI ("disability pension*" AND transition*) OR AB ("disability pension*" AND transition*)	Search modes - Boolean/Phrase	15
93	(MM "Major Depression" OR MM "Depression (Emotion)") AND (TI (prevention OR rehabilitation OR therapy) OR AB (prevention OR rehabilitation OR therapy))	Search modes - Boolean/Phrase	15,280
94	(MM "Anxiety" OR MM "Anxiety Disorders") AND (TI (prevention OR rehabilitation OR therapy) OR AB (prevention OR rehabilitation OR therapy))	Search modes - Boolean/Phrase	5,357
95	TI (depression OR depressive OR anxiety) AND (TI (rehab* OR treatment* OR interven* OR prevent*) OR AB (rehab* OR treatment* OR interven* OR prevent*))	Search modes - Boolean/Phrase	46,359
96	MM "Occupational Stress" OR MM "Psychological Stress"	Search modes - Boolean/Phrase	21,684
97	TI ((job OR work* OR employ*) AND (burnout* OR burn-out* OR strain OR strains)) OR AB ((job OR work* OR employ*) AND (burnout* OR burn-out* OR strain OR strains))	Search modes - Boolean/Phrase	11,105
98	DE "Bullying"	Search modes - Boolean/Phrase	5,700
99	DE "Prejudice"	Search modes - Boolean/Phrase	5,783
100	DE "Discrimination"	Search modes - Boolean/Phrase	5,159

101	DE "Sexual Harassment"	Search modes - Boolean/Phrase	2,171
102	TI (bullying OR discrimination OR harass* OR prejudice) OR AB (bullying OR discrimination OR harass* OR prejudice)	Search modes - Boolean/Phrase	80,949
103	TI ((workplace OR work-place) AND (mistreatment OR abuse OR insults OR discourteous OR discourtes* OR disrespect* OR threat* OR humiliation* OR coerce OR coercion OR manipulation OR aggression OR conflict* OR violen* OR victimization OR victimization))	Search modes - Boolean/Phrase	738
104	AB ((workplace OR work-place) AND (mistreatment OR abuse OR insults OR discourteous OR discourtes* OR disrespect* OR threat* OR humiliation* OR coerce OR coercion OR manipulation OR aggression OR conflict* OR violen* OR victimization OR victimization))	Search modes - Boolean/Phrase	3,793
105	TI ((workplace OR work-place) AND (incivility OR rudeness OR slights OR sarcasm OR mocking OR disparag* OR exclusion OR excluding OR justice OR injustice)) OR AB ((workplace OR work-place) AND (incivility OR rudeness OR slights OR sarcasm OR mocking OR disparag* OR exclusion OR excluding OR justice OR injustice))	Search modes - Boolean/Phrase	1,151
106	(MM "Communication") AND (TI (workplace OR work-place OR psychology) OR AB (workplace OR work-place OR psychology))	Search modes - Boolean/Phrase	880
107	TI (psychological N1 stress) OR AB (psychological N1 stress)	Search modes - Boolean/Phrase	4,812
108	TI (abusive N2 (supervision OR supervisor*)) OR AB (abusive N2 (supervision OR supervisor*))	Search modes - Boolean/Phrase	221

109	TI (grievance* OR tolerance OR communication OR appraisal) OR AB (grievance* OR tolerance OR communication OR appraisal)	Search modes - Boolean/Phrase	170,445
110	TI (antisocial OR mob OR mobbing OR undermin* OR "emotional abuse" OR ostrac*) OR AB (antisocial OR mob OR mobbing OR undermin* OR "emotional abuse" OR ostrac*)	Search modes - Boolean/Phrase	27,311
111	TI ((staff OR employee) AND development) OR AB ((staff OR employee) AND development)	Search modes - Boolean/Phrase	16,489
112	S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91 OR S92 OR S93 OR S94 OR S95 OR S96 OR S97 OR S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110 OR S111	Search modes - Boolean/Phrase	396,372
113	S16 OR S84	Search modes - Boolean/Phrase	34,524
114	S76 OR S112	Search modes - Boolean/Phrase	784,283
115	S113 AND S41 AND S114	Search modes - Boolean/Phrase	354
116	S115 NOT S77	Search modes - Boolean/Phrase	341
117	(S113 AND S41) NOT S115	Search modes - Boolean/Phrase	390
118	S117 NOT S77	Search modes - Boolean/Phrase	373
119	S116	Limiters - Publication Year: 2000-2016; English Search modes - Boolean/Phrase	300
120	S118	Limiters - Publication Year: 2000-2016; English Search modes - Boolean/Phrase	287

121	S119 NOT S82 **DOWNLOADED**	Search modes - Boolean/Phrase	59
122	S120 NOT S83 **DOWNLOADED**	Search modes - Boolean/Phrase	30

Results: 89 total, 89 unique
With interventions: 59 items [5843-5901]
Search ("Outcomes" AND "Interventions" AND "BMJ SR Filter"). Conducted Feb 12 2016.
PsycINFO EbscoHost.
Without interventions: 30 items [5902-5931]
Search ("Outcomes" AND "BMJ SR Filter" NOT "Interventions"); no overlap with "Interventions" set. Conducted Feb 12 2016.
PsycINFO EbscoHost.

TRIP

#1 ("long term disability" or "short term disability" or "disability leave*")
#2 ("disability insurance" or "disability benefit*" or "sick* leave" or "sickness absence")
#3 (absenteeism or presenteeism)
#4 ("supported employment")
#5 ("return to work" or "return to employment" or "return to job")
#6 ("resume work" or "resume employment" or "return to job")
#7 ("lost workday*" or "lost work day*")
#8 ("work productivity" or "job productivity" or "work performance" or "job performance") AND (loss or lost or decrease*)
#9 ("job ability" or "work* ability" or "employ* ability" or "job functioning" or "work* functioning" or "employ* functioning")
#10 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9

#11 review or overview or meta-analys* or meta analys* or metaanalys*
#12 #11 from:2012 to:2016
#13 #10 and #12
#14 (#11 and #1) from:2012 to:2016 [22]
#15 (#11 and #2) from:2012 to:2016 [36]
#16 (#11 and #3) from:2012 to:2016 [30]
#17 (#11 and #4) from:2012 to:2016 [8]
#18 (#11 and #5) from:2012 to:2016 [88]
#19 (#11 and #6) from:2012 to:2016 [3]
#20 (#11 and #7) from:2012 to:2016 [4]
#21 (#11 and #8) from:2012 to:2016 [11]
#22 (#11 and #9) from:2000 to:2016 [39]

Numbers in [ ] = "Systematic Review" filter only
5 items saved to Word bibliography: CIRPDabsenteeismpreventionTRIPBibligraphy2016udpateNEWITEMS.docx
Search ("Outcomes" AND (“TRIP Systematic Review filter"). Conducted Feb 14 2016.

REHABDATA Database (NARIC)

http://www.naric.com/?q=en/REHABDATA
With the exact phrase: systematic review
AND
With at least one of the words: work workday* job jobs employment employ*
46 hits, selected 5
With the exact phrase: meta analysis

AND
With at least one of the words: work workday* job jobs employment employ*
7 hits, selected 3
With the exact phrase: systematic review
AND
With at least one of the words: insurance leave absence absentee* presentee*
9 hits, selected 0
With the exact phrase: meta analysis
AND
With at least one of the words: insurance leave absence absentee* presentee*
2 hits, selected 0
With at least one of the words: meta-analys* metaanalys*
139 hits, selected 2
10 items saved to Word bibliography: CIRPD absenteeism prevention NARIC Bibligraphy 2016 udpate NEW ITEMS.docx
Search ("Work/Outcomes" AND (“SR/MA terms"). Conducted Feb 14 2016.
REHABDATA (NARIC).

REHAB+ Database (McMaster University)

Limited to adult & adolescent:
(work OR workday* OR job OR jobs OR employment OR employe*) AND ("systematic review") 62 hits, 0 selected
(work OR workday* OR job OR jobs OR employment OR employe*) AND ("meta analysis") 62 hits, 0 selected
(work OR workday* OR job OR jobs OR employment OR employe*) AND (meta-analys* OR metaanalys*) 37 hits, 0 selected
Scanned all titles and journal names, but none selected. All would have been identified in other database searches. Conducted Feb 14 2016

Health Evidence

A search was carried out by administrator for the McMaster Public Nurse database “HealthEvidence.org using “Occupational” to identify all work-related systematic reviews that have been reviewed by McMaster University researchers using the same screening tool we adopted for Methodological Review purposes. There were 371 systematic reviews identified.

APPENDIX III - METHODOLOGICAL QUALITY

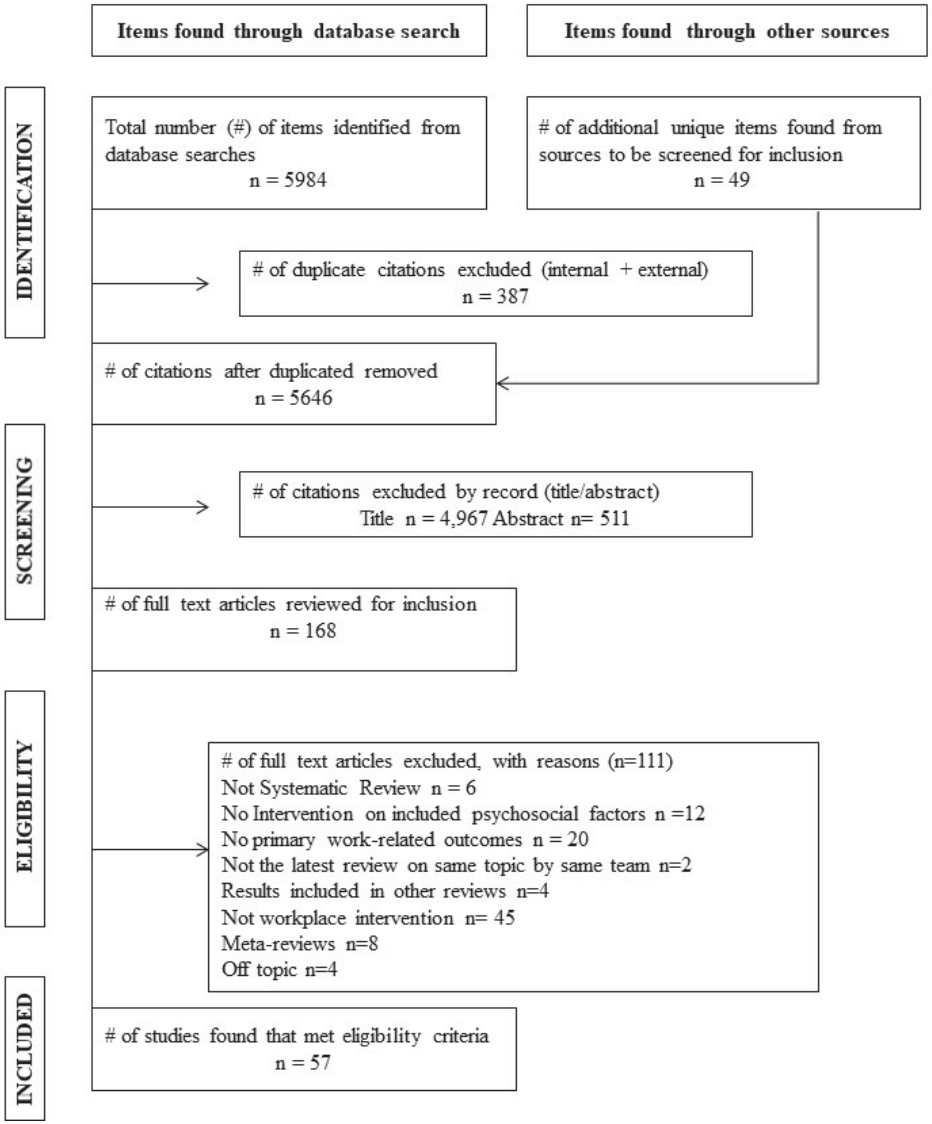
Author	1 Focused PICO	2 Inclusion Criteria	3 Compre-hensive Search Strategy	4 10 + Yrs	5 Level of Evidence	6 Assess MQ	7 Transparent results	8 Approp to combine results	9 Methods to combine results	10 Author Interpretation	Total Score
Aas et al. (2011) [64]	1	1	1	1	1	1	0	1	1	1	9
Amlani et al. (2014) [36]	1	1	1	1	1	1	1	1	1	1	10
Aust & Ducki (2004) [40]	0	0	1	1	1	0	0	1	1	1	6
Bambra et al. (2007) [53]	1	1	1	1	1	1	0	1	0	1	8
Bambra et al. (2008) [54]	1	1	1	1	1	0	1	1	1	1	9
Bond et al. (2006) [28]	1	1	1	1	0	0	0	1	0	1	6
Brown et al. (2011) [37]	1	1	1	1	1	0	0	1	1	0	7
Cancielliere et al.(2011) [41]	1	1	1	1	1	1	1	1	1	1	10
Carroll et al.(2010) [55]	1	1	1	1	1	1	1	1	1	1	10
Caulfield et al. (2004) [27]	1	1	0	1	1	0	0	1	0	0	5
Chapman (2012) [29]	1	1	1	1	1	1	0	1	1	1	9
Conn et al. (2009) [45]	0	0	1	1	1	0	0	0	1	0	4
Corbiere et al. (2006) [12]	1	0	0	1	1	0	1	1	1	1	7
Czbala et al (2011) [21]	1	1	1	1	1	1	1	1	1	1	10
Doki et al. (2015) [13]	1	1	1	1	1	1	1	1	1	1	10
Ebrahim et al (2014) [16]	1	0	0	1	0	0	0	1	1	1	5
Edwards et al. (2003) [26]	1	0	1	1	0	0	0	1	0	0	4
Edwards et al. (2002) [25]	1	0	1	1	0	0	0	0	0	0	3

Author	1 Focused PICO	2 Inclusion Criteria	3 Compre-hensive Search Strategy	4 10 + Yrs	5 Level of Evidence	6 Assess MQ	7 Transparent results	8 Approp to combine results	9 Methods to combine results	10 Author Interpretation	Total Score
Egan et al. (2007) [56]	1	1	1	1	1	1	0	1	0	1	8
Franche et al. (2005) [11]	1	1	1	1	1	1	1	1	1	1	10
Furlan et al. (2012) [20]	1	1	1	1	1	1	0	1	1	1	9
Gensby et al. (2012) [47]	1	1	1	1	1	1	1	1	1	1	10
Giga et al. (2003) [30]	0	0	1	1	1	0	0	0	0	1	4
Gilbody et al. (2006) [57]	1	1	1	1	1	1	0	1	1	0	8
Hodgkinson et al. (2011) [50]	1	1	1	1	1	1	1	1	1	1	10
Kennedy et al. (2010) [55]	1	1	0	1	1	1	1	1	1	1	9
Kuoppala et al. (2008) [43]	1	0	0	1	1	1	0	0	1	1	6
Kuoppala et al. (2008) [49]	0	0	0	1	1	1	1	1	1	1	7
LaMontagne et al. (2007) [31]	1	1	0	1	0	0	1	1	1	1	7
Lee et al. (2014) [24]	1	1	1	1	0	0	0	1	0	1	6
Lee et al. (2014) [22]	1	1	1	1	1	0	0	1	0	1	7
Lerner et al. (2013) [40]	1	1	1	1	1	1	1	1	1	1	10
McLeod (2010) [14]	1	1	0	1	0	1	1	0	1	0	6
Montano et al. (2014) [52]	1	1	0	1	1	0	0	1	0	1	6
Nieuwenhuijsen et al. (2014) [16]	1	1	1	1	1	1	1	1	1	1	10
Nijp et al. (2012) [60]	0	1	1	1	0	0	0	1	0	1	5

Author	1 Focused PICO	2 Inclusion Criteria	3 Compre-hensive Search Strategy	4 10 + Yrs	5 Level of Evidence	6 Assess MQ	7 Transparent results	8 Approp to combine results	9 Methods to combine results	10 Author Interpretation	Total Score
Odeen et al. (2013) [61]	1	1	1	1	1	1	1	1	1	1	10
Palmer et al. (2012) [65]	1	1	1	1	1	1	1	1	1	1	10
Patterson et al. (2010) [62]	1	1	1	1	0	0	0	1	1	1	7
Pelletier et al. (2009) [39]	1	1	1	1	0	0	0	1	1	1	7
Pereira et al. (2015) [66]	1	1	0	1	1	1	1	1	1	1	9
Pomaki et al. (2012) [15]	1	1	1	1	1	1	1	1	1	1	10
Richardson & Rothstein (2008) [32]	1	1	1	1	1	0	0	1	1	1	8
Rivilis et al. (2008) [63]	1	0	0	1	1	1	1	1	1	1	8
Seymour & Grove (2005) [18]	1	1	1	1	1	1	0	1	0	1	8
Shaw et al. (2008) [48]	1	1	0	1	1	0	0	1	1	1	7
Silverstein & Clark (2004) [67]	0	1	0	1	1	0	0	1	0	0	4
Skeffington et al. (2013) [23]	1	1	0	0	1	0	0	1	0	1	5
Tompa et al. (2008) [60]	1	1	1	1	1	1	1	1	1	1	10
Van der Klink et al. (2001) [33]	1	1	0	1	1	0	0	0	0	0	4
Van Dongen et al. (2011) [45]	1	1	1	1	1	1	1	1	1	1	10
Van Holland et al. (2015) [34]	1	1	1	1	1	1	1	1	0	1	9
Van Oostrom et al. (2009) [51]	1	1	1	1	1	1	1	1	1	1	10

Author	1 Focused PICO	2 Inclusion Criteria	3 Compre-hensive Search Strategy	4 10 + Yrs	5 Level of Evidence	6 Assess MQ	7 Transparent results	8 Approp to combine results	9 Methods to combine results	10 Author Interpretation	Total Score
Van Vilsteren et al. (2015) [52]	1	1	1	1	1	1	1	1	1	1	10
Verbeek et al. (2009) [26]	1	1	0	1	0	0	0	1	1	1	6
Webb et al. (2009) [25]	1	0	1	1	1	1	0	1	1	1	8
Westgaard and Winkel (2011) [17]	1	1	1	1	0	0	0	0	0	0	4

APPENDIX IV - – PRISMA



APPENDIX V - SYSTEMATIC REVIEW PURPOSE

Aas et al. (2011) [64]	Workplace interventions for neck pain in workers (Review)	To determine the effectiveness of workplace interventions compared to no treatment, usual care for adult workers with neck pain.
Amlani et al. (2014) [36]	Does Physical Activity Have an Impact on Sickness Absence? A Review	To evaluate the relationship physical activity and sickness absence among employees and which type of physical activity and its intensity are most effective.
Aust & Ducki (2004) [43]	Comprehensive Health Promotion Interventions at the Workplace: Experiences With Health Circles in Germany	To assess the effects of employee involvement in "health circles" on working conditions, employee health, and rate of absenteeism in German companies.
Bambra et al. (2007) [53]	The psychosocial and health effects of workplace reorganisation 2: A systematic review of task restructuring interventions	To evaluate the psychosocial and health effects of workplace reorganization and task restructuring based on the demand-control-support.
Bambra et al. (2008) [54]	Shifting schedules: The health effects of reorganizing shift work	To evaluate the effects of health and work-life balance of organizational interventions that redesign shift work schedules
Bond et al. (2006) [28]	A business case for the Management Standards for stress	To quantify the level of evidence supporting UK management standards focused on six workplace stressors (demands, control, support, relationships, role, and change).
Brown et al. (2011) [44]	Does Physical Activity Impact on Presenteeism and Other Indicators of Workplace Well-Being?	To evaluate the impact physical activity has on employee well-being and presenteeism.
Cancelliere et al.(2011) [37]	Are workplace health promotion programs effective at improving	To assess whether workplace health promotion programs are effective at improving presenteeism in workers.
Carroll et al.(2010) [55]	Workplace involvement improves return to work rates among employees with back pin on long-term sick leave: a systematic review of effectiveness and cost-effectiveness of interventions	To assess whether workplace interventions are more effective than non-work focused intervention RTW or sickness absence
Caulfield et al. (2004) [27]	A review of occupational stress interventions in Australia	To review the impact of occupational stress management interventions in Australia to mitigate work stress and improve employee health and wellness.
Chapman (2012) [39]	Meta-evaluation of worksite health promotion economic return	To evaluate the cost-effectiveness of worksite health promotion programs
Conn et al. (2009) [45]	Meta-Analysis of Workplace Physical Activity Interventions	To investigate the effects of work-based physical activity interventions on physical behaviour, health and wellbeing, and workplace outcomes, and to identify potential workplace moderators that influence outcomes.
Corbiere et al. (2006) [12]	A systematic review of psychological return-to-work interventions for people with mental health problems and/or physical injuries	To review the occupational and health outcomes of psychological return-to-work interventions that aim to support people with psychological and/or physical health problems.
Czbala et al (2011) [21]	Psychosocial Interventions in Workplace Mental Health Promotions	To identify evidence-based psychosocial workplace programs and interventions that improve mental health, work-related individual and organizational outcomes.
Doki et al. (2015) [13]	Psychological Approach of Occupational Health Service	To examine the effectiveness of organizational interventions employed by occupational health services on reducing sick leave duration for people with psychiatric disorders.

Ebrahim et al (2014) [58]	Psychotherapy for Depression in Claimants Receiving Wage Replacement Benefits	To review current evidence that addresses the level of effectiveness of psychotherapy offered to individuals with depression who receive disability benefits.
Edwards et al. (2003) [29]	Stress management for mental health professionals: a review of effective techniques	To evaluate the effectiveness of various stress management strategies on reducing burnout and improving job satisfaction in health professionals.
Edwards et al. (2002) [28]	A systematic review of stress and stress management interventions for mental health nurses	To determine the effectiveness of stress management interventions for mental health professionals
Egan et al. (2007) [56]	The psychosocial and health effects of workplace reorganisation. 1. A. A systematic review of organisational- level interventions that aim to increase employee control	To evaluate the impact of organisational level interventions that aim to increase employee control
Franche et al. (2005) [11]	Workplace-Based Return-to-Work Interventions:A Systematic Review of the Quantitative Literature	To evaluate the effectiveness of workplace-based return to work interventions for workers with musculoskeletal and pain conditions.
Furlan et al. (2012) [23]	Systematic review of intervention practices for depression in the workplace	To identify evidence-based interventions that are effective in managing depression in workers and mitigate the financial impact of depression.
Gensby et al. (2012) [47]	Workplace Disability Management Programs Promoting Return to Work: A Systematic Review	To evaluate the effectiveness of workplace disability management programs implemented and practised by employers on promoting return to work.
Giga et al. (2003) [30]	The UK Perspective: A review of research on organizational Stress Management Interventions	To review UK-based studies that have assessed the impact of stress reduction interventions (types, methods, and results).
Gilbody et al. (2006) [57]	Can we improve the morale of staff working in psychiatric units? A systematic review	To evaluate the effectiveness of interventions to improve well-being, staff morale and other work-related outcomes of psychiatric unit staff.
Hodgkinson et al. (2011) [59]	Effectiveness of staffing models in residential, subacute, extended aged care settings on patient and staff outcomes	To identify which staffing models are associated with the best patient and staff outcomes.
Kennedy et al. (2010) [60]	Systematic review of the role of occupational health and safety interventions in the prevention of upper extremity musculoskeletal symptoms, signs, disorders, injuries, claims and lost time	To examine the effectiveness of occupational health and safety strategies on reducing the incidence and impact of upper extremity musculoskeletal disorders and injuries on worker wellness and organizational costs.
Kuoppala et al. (2008) [46]	Rehabilitation and Work Ability: A Systematic Literature Review	To evaluate the effectiveness of rehabilitation on sickness absence, return to work, and disability pensions for work populations.
Kuoppala et al. (2008) [39]	Work health promotion, job well-being, and sickness absences--a systematic review and meta-analysis	To study the association between work health promotion, job well being, workability and absenteeism and early retirement
LaMontagne et al. (2007) [31]	A systematic review of the job stress intervention evaluation literature, 1990-2005	To summarize the methods and effectiveness of interventions aimed at alleviating job-related stress.
Lee et al. (2014) [22]	Effective interventions for mental health in male-dominated workplaces	To identify workplace interventions addressing mental health problems in male-dominated industries

Lee et al. (2014) [24]	A systematic review of alcohol interventions among workers in male-dominated industries	To examine the efficacy of interventions for risky alcohol use among workers in MDIs to assist work- places in making decisions about effective responses
Lerner et al. (2013) [40]	A systematic review of the evidence concerning the economic impact of employee-focused health promotion and wellness programs	To determine the cost-effectiveness and benefits of workplace health promotion programs.
McLeod (2010) [54]	Effectiveness of Workplace Counselling	To examine the impact of workplace counselling services on mental health and wellbeing, work-related attitudes and behaviour, and absences due to sickness.
Montano et al. (2014) [55]	Effects of organisational-level interventions at work on employees' health: a systematic review	To evaluate the effectiveness of organizational level interventions on employee health.
Nieuwenhuijsen et al. (2014) [19]	Interventions to improve return to work in depressed people	To evaluate the effectiveness of interventions aimed at reducing work disability in employees with depressive disorders.
Nijp et al. (2012) [60]	systematic review on the association between employee worktime control and work-non-work balance, health and well-being and job-related outcomes	To examine associations between work time control on work-non-work balance, health outcomes including stress, burnout, affective well-being, sick absence, general health, and other job related work outcomes.
Odeen et al. (2013) [61]	Systematic review of active workplace interventions to reduce sickness absence	To determine the effectiveness of active workplace interventions on preventing and reducing sickness absence across medical conditions.
Palmer et al. (2012) [58]	Effectiveness of community- and workplace-based interventions to manage musculoskeletal-related sickness absence and job loss: a systematic review	To assess the effectiveness of interventions in community and workplace settings to reduce sickness absence and job loss in workers with musculoskeletal disorders .
Patterson et al. (2010) [62]	Systematic review of the links between human resource management practices and performance	To assess the evidence from a series of systematic reviews on the use of human resource management practices on business intermediate, and final outcomes including organizational performance or patient care.
Pelletier et al. (2009) [41]	A review and analysis of the clinical and cost-effectiveness studies of comprehensive health promotion and disease management programs at the worksite: Update VII 2004-2008	To assess the experimental and quasi-experimental research trials on clinical and/or cost outcomes of worksite health promotion and disease management interventions.
Pereira et al. (2007) [56]	The impact of onsite workplace health-enhancing physical activity	To investigate the effects of onsite workplace health-enhancing physical activity (HEPA) programmes on worker productivity
Pomaki et al. (2012) [18]	Workplace-Based Work Disability Prevention Interventions for Workers with Common Mental Health Conditions: A Review of the Literature	To summarize evidence on workplace-based work disability prevention interventions in workers with common mental health conditions
Richardson & Rothstein (2008) [32]	Effects of Occupational Stress Management Intervention Programs :A Meta-Analysis	To determine the effectiveness of stress management interventions in occupational settings.
Rivilis et al. (2008) [63]	Effectiveness of participatory ergonomic interventions on health	To assess the effectiveness of participatory ergonomic interventions for improving workers' health.
Schroer et al. (2014) [42]	Evidence-based lifestyle interventions in the workplace--an overview	To summarize the current evidence on the efficacy and cost-effectiveness of different workplace lifestyle interventions to determine which intervention types are associated with improvements in nutrition, physical activity and healthy weight.

Seymour & Grove (2005) [78]	Workplace interventions for people with common mental health problems: Evidence review and recommendations	To assess the evidence on the management of common mental disorder and mental distress in the work environment
Shaw et al. (2008) [40]	A literature review describing the role of return-to-work coordinators in trial programs and interventions designed to prevent workplace disability	To identify intervention studies with a RTW co-ordinator providing direct, on-site workplace liaison to reduce work absences associated with physical disorders.
Silverstein & Clark (2004) [67]	Interventions to reduce work-related musculoskeletal disorders	To identify intervention studies that included ergonomics related primary prevention measures to reduce musculoskeletal symptoms and disorders at work
Skeffington et al. (2013) [23]	The primary prevention of PTSD: A systematic review	To identify and compare resilience-building programs who were subsequently exposed to a potentially traumatic event
Tompa et al. (2008) [50]	A Systematic Review of Disability Management Interventions with Economic Evaluations	To assess the evidence on whether incremental investment in disability management interventions is worth undertaking
Van der Klink et al. (2001) [77]	The Benefits of Interventions for Work-Related Stress	To investigate the efficacy and cost-effectiveness of occupational stress-reducing interventions for which populations using quantitative meta-analysis methods
Van Dongen et al. (2011) [45]	Systematic review on the financial return of worksite health promotion programmes aimed at improving nutrition and/or increasing physical activity	To appraise and summarize the current evidence on the financial return of WHP programmes aimed at improving nutrition and/or increasing physical activity.
Van Holland et al. (2015) [26]	Preventive occupational health interventions in the meat processing industry in upper-middle and high income countries: A systematic review on their effectiveness	To investigate the effectiveness of occupational health interventions in the meat processing industry on work and health related outcomes
Van Oostrom et al. (2009) [41]	Workplace interventions for preventing work disability	To investigate the effectiveness of workplace interventions compared to usual care or clinical interventions on work-related outcomes and health outcomes; and to evaluate whether the effects differ when applied to musculoskeletal disorders, mental health problems, or other health condition
Van Vilsteren et al. [27]	Workplace interventions to prevent work disability in workers on sick leave (Review)	To determine the effectiveness of workplace interventions inpre-ventingworkdisabilityamongsick-listedworkers,whencomparedto usual care or clinical interventions
Verbeek et al. [79]	A Systematic review of occupational safety and health business cases	To assess business outcomes on the adoptions of occupational safety and health interventions.
Webb et al. [52]	A systematic review of work-place interventions for alcohol-related problems	To determine which interventions most effectively reduce work-place-related alcohol problems
Westgaard & Winkel [62]	Occupational musculoskeletal and mental health: Significance of rationalization and opportunities to create sustainable production systems - A systematic review	To identify the effects of production system rationalization and organizational-level measures on musculoskeletal and mental health and related risk factors.

APPENDIX VI – INTERVENTION TABLES BY RISK FACTOR

Job Control

Systematic Review	Title	Job Control Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Aas et al (2009)[44]	Workplace interventions for neck pain in workers (Review)	Participatory ergonomics. Workers identified problems, planned and evaluated changes and implemented them in collaboration with management and technical staff. Regular meetings for education and to standardize working methods.	High	1	1	0	0	1	0	1 = +		
Aust & Ducki (2004)[40]	Comprehensive Health Promotion Interventions at the Workplace: Experiences With Health Circles in Germany	Health circles are discussion groups, formed at the workplace, to develop change options for the improvement of potentially harmful working conditions. The aim of the circle meetings is to deal with working conditions viewed by employees to be highly demanding or somehow problematic.	Moderate	7	0	4	0	7	5	5 = +, 1 = 0, 1 = -		1 = +
Bambra et al (2007)[23]	The psychosocial and health effects of workplace reorganisation 2: A systematic review of task restructuring interventions	Primary nursing, production line change, participatory team work.	High	5	4	4	1	4	0	1 = +, 3 = 0		
Bambra et al (2008)[24]	Shifting schedules: The health effects of reorganizing shift work	Irregular to regular self-scheduled shifts	High	1	0	4	2	1	3	1 = +		1 = +
Bond et al (2006)[28]	A business case for the Management Standards for stress	Steering group to identify ways to increase job control in problematic areas, participative work reorganization, revising supervisory arrangements	Moderate	4	0	0	0	1	0	2 = +	3 = +, 1 = 0	2 = +
Cancelliere et al (2011)[41]	Are workplace health promotion programs effective at improving	participatory processes	High	1	3	2	3	1	1			2 = +
Carroll et al (2010)[18]	Workplace involvement improves return to work rates among employees with back pain on long-term sick leave: a systematic review of effectiveness and cost-effectiveness of interventions	Sherbrooke model or other intervention involving the worker in RTW decision-making.	High	5	5	0	0	0	0	3 = +	2 = +	
Caulfield (2004)[27]	A review of occupational stress interventions in Australia	Organizational: job design to to improve working conditions, surveillance of psychological disorders and risk factors. Individual: information, dissemination, education and training. Increase utilization of work counselor. Responsibility: Management, counselor, individuals (Dollard 1998)	Moderate	1	1	1	0	1	0		1 = +	
Corbiere et al (2009)12	A systematic review of psychological return-to-work interventions for people with mental health problems and/or physical injuries	Participatory work reorganization (Bond), participatory intervention to improve psychosocial environment (Lavoie), stress management training, comprehensive stress management program (Munz)	Moderate	3	1	0	3	0	0	3 = +, 1 = 0		1 = +
Czbala et al (2011)21	Psychosocial Interventions in Workplace Mental Health Promotions	Participatory, stress innoculation, changes to working conditions	High	2	4	2	1	7	4	2 = +		2 = +

Systematic Review	Title	Job Control Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Egan et al. (2007)[36]	The psychosocial and health effects of workplace reorganisation. 1. A A systematic review of organisationalllevel interventions that aim to increase employee control	Worker steering committee. Nurses given control over personnel, work scheduling, training and som budgeting. Consultative committee on organizational change. Stress reduction working committee. Participatory ergonomics committee.	High	5	2	3	2	2	1	4 = +, 1 = 0		1 = +
Furlan et al (2011)[29]	Systematic review of intervention practices for depression in the workplace	Labour expert advice about work processes including decreasing demand and increasing control, work stress, time-management, etc (Blonk). Stress reduction program with supervisors asked to reduce job stressors (Kawakami)	High	2	1	0	5	3	2	2 = +		
Gensby (2012)[47]	Workplace Disability Management Programs Promoting Return to Work: A Systematic Review	Joint labour mangement committee in collaboration with immediate supervisor, injured worker, case co-ordination and clinical /work expertise eg. OT, PT, MD, Ergonomist. Team meetings, continued education for employees and supervisors supporting access to transitional work, managed care,	High	4	7	0	0	0	0	4 = +	4 = +	
Giga et al. (2003)[30]	The UK Perspective: A review of research on organizational Stress Management Interventions	Bond & Bunce intervention described as targeting participation autonomy.	Low	1	2	0	2	2	2	1 = +		
Gilbody et al. (2006)[37]	Can we improve the morale of staff working in psychiatric units? A systematic review	change to primary care nursing model, manager support, advice on core skills and interprofessional communication training (Melchior 1996)	High	1	2	1	0	1	0	1 = +	1 = +	
Hodgkinson (2011)[38]	Effectiveness of staffing models in residential, subacute, extended aged care settings on patient and staff outcomes	Primary care model in nursing (vs. team nursing). 24 hour accountability and decision-making by one nurse, case method of assignment, directo communication between caregivers, a shift in emphasis of head nurse role to that of facilitator. Boumans 2005 study is not psychosocial intervention.	High	1	0	0	0	0	0	1 = 0		1 = +
Kennedy et al. (2010)[39]	Systematic review of the role of occupational health and safety interventions in the prevention of upper extremity musculoskeletal symptoms, signs, disorders, injuries, claims and lost time	Prevention strategies and physical therapy (Lemstra)	High	1	1	0	0	0	0	1=+	1=+	
LaMontagne (2007)[31]	A systematic review of the job stress intervention evaluation literature, 1990-2005	Participatory interventions targeting individuals or organizations, or both.	Moderate	12	4	10	7	22	18	12=+, 3=0	5=+	

Systematic Review	Title	Job Control Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Montano et al. (2014)[39]	Effects of organisational-level interventions at work on employees' health: a systematic review	Participative action research intervention. A steering committee was created to develop work organization changes to increase job control. Action plan developed (see Bond 2006). Iterative injury risk identification, assessment and control process.Various hazard controls implemented including increased rate of daily rotation to reduce repetitive strain (Carrivick 2002). Identification of factors perceived by employees as causes of stress at work, job redesign, and active involvement of employees for improving organization (Dahl-Jorgensen 2005). Introduction of a system to report problems and request help , consultation over new uniform, choice of break timing (Michie 2004). Participatory action research - teams to work on OHS issues (Rasmussen 2006). Enhancement of leadership, participatory management, performance feedback (Anderzen 2005). Prevention team of all stakeholders for reducing occupational injuries (Porru 2011).	Moderate	7	2	2	2	3	2	2 = 0, 2 = +	1 = +	4 = +
Nijp et al. (2012)[40]	systematic review on the association between employee worktime control and work-non-work balance, health and well-being and job-related outcomes	WTC (Work Time Control) including: start/end time control (flextime), when to take a break, when to take vacation or a day off, distribution of workdays of the work week, when and whether to work overtime.	Moderate	7	0	0	1	2	3	5 = +	1 = +, 2 = 0	
Patterson et al. (2010)[41]	Systematic review of the links between human resource management practices and performance. [Review]	Increasing autonomy; local decision-making; participatory team work (autonomus teams); measurement systems with mostly non-evaluative feedback, expanded problem-solving;goal setting;	Moderate	16	2	2	1	2	1	5 = +, 1 = 0	6 = +, 1 = -	16 = +, 2 = 0
Pelletier et al. (2009)[38]	A review and analysis of the clinical and cost-effectiveness studies of comprehensive health promotion and disease management programs at the worksite: Update VII 2004-2008	Peer-care training to recognize and intervene co-workers with substance use problems with random testing	Moderate	1	0	0	0	1	1		1 = +	
Richardson & Rothstein (2008)[32]	Effects of Occupational Stress Management Intervention Programs:A Meta-Analysis	Introduction of staff meetings to increase participation	High	1	0	2	0	14	11	1 = 0		
Rivilis et al. (2008)[33]	Effectiveness of participatory ergonomic interventions on health	participatory ergonomics. Workers involved to increase control and thereby decrease psychosocial risk factors	High	6	6	2	0	1	0	3 = +, 1 = 0	4 = +	

Systematic Review	Title	Job Control Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Seymour & Grove (2009)[16]	Workplace interventions for people with common mental health problems: Evidence review and recommendations	Munz - self-management training and stressor reduction process. Reynolds - Individual counselling or Organisational intervention to increase opportunity and level of participation and control of all employees in the day to day decisions within work teams, clarify responsibilities and duties, increase level of job-related information available to employees and to enable supervisors to give clear feedback about performance. Relevant training and feedback was provided for managers.	High	1	1	2	4	5	3	1 = +		1 = +
Shaw el al. (2008)[46]	A literature review describing the role of return-to-work coordinators in trial programs and interventions designed to prevent workplace disability.	Participatory ergonomics, RTW planning with worker	Moderate	5	0	0	0	0	0	5 = +		
Silverstein and Clark (2004)[47]	Interventions to reduce work-related musculoskeletal disorders	Participatory ergonomics. One study decreased discretion	Low	1	0	0	0	0	0	1 = +, 1 = -	1 = +, 1 = 0	
van Holland et al. (2015)[48]	Preventive occupational health interventions in the meat processing industry in upper-middle and high income countries: A systematic review on their effectiveness	1: participatory ergonomics; injury prevention as a collective activity; job rotation; creation of health and safety committee; encouraging participation in OHS dcision-making;developing union involvement; education; 2: same a 1 plus site specific supervisor training; 3: Participatory standard hazard correction; added medical management	High	2	2	0	0	0	0	1 = +	1 = +	
van Oostrom et al. (2009)[31]	Workplace interventions for preventing work disability	Participatory ergonomics, labour expert advice on work processes with suggestions on how to lower workload and job demands, and increase decision latitude. Worker always involved in RTW planning	High	3	0	0	0	0	0	3 = +	1 = +, 1 = 0	
van Vilsteren et al. (2015)[50]	Workplace interventions to prevent work disability in workers on sick leave (Review)	Participatory workplace intervention involving the employee and supervisor aimed at reducing obstacles for RTW by reducing obstacles for RTW by reaching consensus about an action plan for RTW.	High	1	5	0	1	1	0	1 = +		
Verbeek et al. (2009)[28]	A Systematic review of occupational safety and health business cases	Participatory ergonomics.	Moderate	1	0	0	0	0	0	1= +	1= +	1= +
Westgaard and Winkel (2011)[17]	Occupational musculoskeletal and mental health: Significance of rationalization and opportunities to create sustainable production systems - A systematic review	Production system rationalizations.	Low	2	0	0	0	0	0	1+		
				111	56	41	35	82	57	70 = +	34 = +	33 = +
										2 = -	1 = -	N/A
										15 = 0	5 = 0	2 = 0

Job Demands

Systematic Review	Title	Job Control Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Manage-ment	Wellness	Absence	Cost	Produc-tivity
Aas et al (2009)[4]	Workplace interventions for neck pain in workers (Review)	Participatory ergonomics. Workers identified problems, planned and evaluated changes and implemented them in collaboration with management and technical staff. Regular meetings for education and to standardize working methods.	High	1	1	0	0	1	0	1+		
Bambra et al (2007)[23]	The psychosocial and health effects of workplace reorganisation 2: A systematic review of task restructuring interventions	training sessions in perobiem-solving, personal and organizational stress reduction.	High	5	4	4	1	4	0	3=0, 1=-		
Cancelliere et al (2011)[41]	Are workplace health promotion programs effective at improving	extra rest break time for workers engaged in highly repetitive work	High	1	3	2	3	1	1			1 = +, 1 = -
Carroll et al (2010)[28]	Workplace involvement improves return to work rates among employees with back pain on long-term sick leave: a systematic review of effectiveness and cost-effectiveness of interventions	Sherbrooke model or other intervention involving the worker in RTW decision-making (Loisel; Steenstra; Purdon). Gradually increasing graded activity intervention carried out by employee's occupation health services department (Hlobil; Staal). Direct communication with employer by occupational physician (OP) and exercise, education, and workplace modification recommendations (Verbeek).	High	5	5	0	0	0	0	3=+, 2=0		
Caulfield (2004)[27]	A review of occupational stress interventions in Australia	Organizational: job design to to improve working conditions, surveillance of psychological disorders and risk factors. Individual: information, dissemination, education and training. Increase utilization of work counselor. Responsibility: Management, counselor, individuals	Moderate	1	1	1	0	1	0		1 = +	
Corbiere et al (2009)[12]	A systematic review of psychological return-to-work interventions for people with mental health problems and/or physical injuries	Design design of the interventions was a mix of theory driven and practice based, between bottom up and top down, and between experts concepts and a participatory approach.	Moderate	3	1	0	3	0	0	1 =0		
Czbala et al (2011)[31]	Psychosocial Interventions in Workplace Mental Health Promotions	working conditions and lifestyle changes.	High	2	4	2	1	7	4	1=+		3 = +
Doki et al (2015)[13]	Psychological Approach of Occupational Health Service	Work-related problem solving skills and/or CBT.	High	0	10	0	3	0	0	10 = 0		
Ebrahim et al (2014)[16]	Psychotherapy for Depression in Claimants Receiving Wage Replacement Benefits	Work-focused CBT vs. standard	Moderate	0	1	0	2	0	0	1 = +	1 = +	
Edwards et al (2003)[29]	A systematic review of stress and stress management interventions for mental health nurses	Behavioural training therapy aimed at improving nurses' preparation for therapeutic tasks by thelping them develop skills and knowledge.	Low	0	1	0	0	1	1	1 = +		1 = +

Systematic Review	Title	Job Control Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Manage-ment	Wellness	Absence	Cost	Produc-tivity
Egan et al. (2007)[9]	The psychosocial and health effects of workplace reorganisation. 1. A A systematic review of organisationallevel interventions that aim to increase employee control	Consultative committee (employees, managers and researchers) to discuss organizational change. Concurrent health promotion programme (smoking cessation and physical activity) and psychosocial skills training. Stress reduction "working committee" comprised of worksite supervisors, personnel staff and corporate medical staff. More and smaller teams with sub-supervisors and more on the job training; and ergonomic improvements	High	5	2	3	2	2	1	2 = +		
Franche et al. (2005)[11]	Workplace-Based Return-to-Work Interventions:A Systematic Review of the Quantitative Literature	Early contact case management, RTW coordination and ergonomic visit within first week, supervisor present (Arnetz); A) Physiatrist assessment with consultation to discuss clinical findings, reassurance, work conditions, good back posture, Supervisor present ergonomic visit; minimal ergonomic content. B) Intervention A plus worksite visit with supervisor, company nurse, and company physician (Karjalainen) ; Supervisor present ergonomic visit, early contact, work accommodation, healthcare provider contact, and varied clinical work-related interventions included back school, functional restoration, CBT, back clinic (Loisel); Integrated onsite case management including early contact, supervisor present ergonomic visit, work accommodation, health provider contact (Bernacki); Training for occupational physicians, early contact, work accommodation, healthcare provider contact (Verbeek); Early contact with ergonomic visit (supervisor attendance not known), combined occupational-clinical, early assessment, work accommodation, healthcare provider contact, worksite ergonomic visit, RTW coordination (Yassi)	High	0	6	4	0	0	0	6 = +	3 = +, 1 = 0	
Furlan et al. (2011)[28]	Systematic review of intervention practices for depression in the workplace	Labour expert advice abour work processes including decreasing demand.	High	2	1	0	5	3	2	1 = +		
Gensby (2012)[47]	Workplace Disability Management Programs Promoting Return to Work: A Systematic Review	on-site access to treatment; modification of duties; case coordination; job rotation; work assessment; labour mangaement	high	4	7	0	0	0	0	7 = +	5 = +	
Giga et al. (2003)[48]	The UK Perspective: A review of research on organizational Stress Management Interventions	job redesign and particapatory intervention, changes to physical environment characteristics	low	1	2	0	2	2	2	1 = +		2 = +

Systematic Review	Title	Job Control Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Gilbody et al. (2006)[37]	Can we improve the morale of staff working in psychiatric units? A systematic review	Change to primary care nursing model, manager support, advice on core skills and interprofessional communication training (Mechior 1996); Change to continuous care ward vs intake and discharge ward (Long 1990), Empathetic skill training X4 one day workshops focus on better patient communication skills (Smoot & Gonzales 1995)	High	1	2	1	0	1	0	2 = +, 1 = -	2 = +	
Kennedy et al. (2010)[38]	Systematic review of the role of occupational health and safety interventions in the prevention of upper extremity musculoskeletal symptoms, signs, disorders, injuries, claims and lost time	Prevention strategies and physical therapy (Lemstra)	high	1	1	0	0	0	0	1=+		
LaMontagne (2007)[31]	A systematic review of the job stress intervention evaluation literature, 1990-2005	integrated tertiary-level intervention with primary and/or secondary; 3 years; included intervention at physical work environment (E), organisational (O), at the interface of organisation and individual (O/I), and individual (I) (Adkins 2000). education discussion group and action plan program (Eriksson, 1992).	moderate	12	4	10	7	22	18	3 = +	2 = +	1 = +
Lerner et al. (2013)[44]	A systematic review of the evidence concerning the economic impact of employee-focused health promotion and wellness programs	onsite program including modified duties and job placement, injury prevention, nurse case manager, training of clinical staff, improbed communication among stakeholders	High	0	1	1	6	0	16	1 = +	1 = +	
Montano et al. (2014)[39]	Effects of organisational-level interventions at work on employees' health: a systematic review	Iterative injury risk identification, assessment and control process.Various hazard controls implemented including increased rate of daily rotation to reduce repetitive strain (Carrivick 2002). Identification of factors perceived by employees as causes of stress at work, job redesign, and active involvement of employees for improving organization (Dahl-Jorgensen 2005).	moderate	7	2	2	2	3	2	1 =+, 1 =0	1 = +	1 = +
Nieuwenhuijsen et al. (2014)[19]	Interventions to improve return to work in depressed people	Work and Health Initiative (WHI) intervention provided by EAP counsellors, including work coaching and modification, care coordination, cognitive-behavioural strategies (Lerner);	High	0	1	0	1	0	0	1 = +		
Palmer et al. (2012)[40]	Effectiveness of community- and workplace-based interventions to manage musculoskeletal-related sickness absence and job loss: a systematic review: [Review]	Multi-system interaction to support clinical and occupational needs); Multi-method to remove barriers to RTW; Enhanced support - workplace support; consultation to other stakeholders; Resource use and coordination	High	0	1	1	0	0	0	1 = +		
Patterson et al. (2010)[42]	Systematic review of the links between human resource management practices and performance. [Review]	1: team planning approach MD's and RN's; redesign of ER; creation of functional teams; 2: increase autonomy, variety; feedback, enrichment of jobs	moderate	16	2	2	1	2	1	1 = +	1 = +	2 = +

Systematic Review	Title	Job Control Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Pomaki et al. (2012)[41]	Workplace-Based Work Disability Prevention Interventions for Workers with Common Mental Health Conditions: A Review of the Literature	Group rehabilitation program, problem-solving-focused psychological intervention, multimodal guideline-based care by Ops (e.g. stress inoculation, problem solving, work-related interventions), structured telephone-based intervention	High	0	2	0	2	2	0	1 = +, 2 = 0	1 = +, 1 = -	1 = +
Rivilis et al. (2008)[42]	Effectiveness of participatory ergonomic interventions on health	Participatory ergonomics	High	6	6	2	0	1	0	3 = +, 1 = 0	4 = +, 1 = -	
Seymour & Grove (2009)[18]	Workplace interventions for people with common mental health problems: Evidence review and recommendations	Training sessions in peroblem-solving, personal and organizational stress reduction.	High	1	1	2	4	5	3			1 = +
Skeffington et al. (2013)[23]	The primary prevention of PTSD: A systematic review	Pre-deployment stress debriefing (e.g. role of and how to access supports, education about stress, managing stressful thinking) (Sharpley); Cognitive-behavioural stress management (4 weekly sessions, e.g. education, relaxation techniques, problem-solving and communication skills) (Sijanc-Voloder)	Moderate	0	1	0	2	1	0	1 = 0		1 = +
van Holland et al. (2015)[34]	Preventive occupational health interventions in the meat processing industry in upper-middle and high income countries: A systematic review on their effectiveness	participatory ergonomics; injury prevention as a collective activity; creation of health and safety committee; encouraging participation in OHS dcision-making;developing unioin involvement; site specific supervisor training;	High	2	2	0	0	0	0	1 = +	2 = +	
van Vilsteren et al. (2015)[43]	Workplace interventions to prevent work disability in workers on sick leave (Review)	Worksite assessment and work adjustments based on methods used in participatory ergonomics (Anema/Steenstra); Early workplace-based intervention consisting of an interview focused on the social and occupational situation, including possible adaptation at work, ergonomic assessment and improvements (Arnetz); Integrated care intervention coordinated by a clinical occupational physician, based on participatory ergonomics and a graded activity program (Lambeek); Visit to OP and participatory ergonomics evaluation (Loisel)	High	1	5	0	1	1	0	5 = +		
				77	80	37	48	60	51	45 = +	24 = +	14 = +
										2 = -	1 = -	1 = -
										21 = 0	1 = 0	NA

Social Support

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Aust & Ducki (2004)[40]	Comprehensive Health Promotion Interventions at the Workplace: Experiences With Health Circles in Germany	Health circles are discussion groups, formed at the workplace, to develop change options for the improvement of potentially harmful working conditions. The aim of the circle meetings is to deal with working conditions viewed by employees to be highly demanding or somehow problematic.	Moderate	7	0	4	0	7	5	4+		1+
Bambra et al (2007)[33]	The psychosocial and health effects of workplace reorganisation 2: A systematic review of task restructuring interventions	Primary nursing, introduction of production line, more and smaller teams with sub-supervisors; participatory committee, more on the job training and ergonomic improvements. Increased task variety, more teamwork, more personnel, more time to plan work, bonus scheme.	High	5	4	4	1	4	0	3 =0, 1=-		
Bambra et al (2008)[34]	Shifting schedules: The health effects of reorganizing shift work	Self-scheduling shifts	High	1	0	4	2	1	3	1=+		
Cancelliere et al (2011)[41]	Are workplace health promotion programs effective at improving	improving supervisor/manager knowledge regarding mental health in the workplace; single 60 minute session + 120 minute active listening training with role playing (Takao, 2006); Participatory intervention meetings with HR to discuss environmental (improvements, facilitators & supervisors training in mental health, facilitator supported and sustained employee autonomous activities, team-based problem solving, shared work related goals (Tsutsumi, 2009)	High	1	3	2	3	1	1			2=+
Caulfield (2004)[27]	A review of occupational stress interventions in Australia	Organizational: job design to to improve working conditions, surveillance of psychological disorders and risk factors. Individual: information, dissemination, education and training. Increase utilization of work counselor. Responsibility: Management, counselor, individuals	Moderate	1	1	1	0	1	0		1 = +	
Czbala et al (2011)[31]	Psychosocial Interventions in Workplace Mental Health Promotions	Interpersonal communication skills training, developmental EI training	High	2	4	2	1	7	4			1 = +, 1 = 0
Egan et al. (2007)[36]	The psychosocial and health effects of workplace reorganisation. 1. A A systematic review of organisationallevel interventions that aim to increase employee control	Consultative committee (employees, managers and researchers) to discuss organizational change. Concurrent health promotion programme (smoking cessation and physical activity) and psychosocial skills training. Stress reduction "working committee" comprised of worksite supervisors, personnel staff and corporate medical staff. More and smaller teams with sub-supervisors and more on the job training; and ergonomic improvements. Participatory ergonomics team.	High	5	2	3	2	2	1	3 = +		

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Manage-ment	Wellness	Absence	Cost	Produc-tivity
Franche et al. (2005)[17]	Workplace-Based Return-to-Work Interventions:A Systematic Review of the Quantitative Literature	Early contact case management, RTW coordination and ergonomic visit within first week, supervisor present (Anetz); Supervisor present ergonomic visit, early contact, work accommodation, healthcare provider contact, and varied clinical work-related interventions included back school, functional restoration, CBT, back clinic (Loisel); Integrated onsite case management including early contact, supervisor present ergonomic visit, work accommodation, health provider contact (Bernacki); Training for occupational physicians, early contact, work accommodation, healthcare provider contact (Verbeek); Early contact with ergonomic visit (supervisor attendance not known), combined occupational-clinical, early assessment, work accommodation, healthcare provider contact, worksite ergonomic visit, RTW coordination (Yassi)	High	0	6	4	0	0	0	5 = +	3 = +	
Gilbody et al. (2006)[37]	Can we improve the morale of staff working in psychiatric units? A systematic review	Change to primary care nursing model, manager support, advice on core skills and interprofessional communication training (Mechior 1996);	High	1	2	1	0	1	0		1 = +	
LaMontagne (2007)[31]	A systematic review of the job stress intervention evaluation literature, 1990-2005	education discussion group and action plan program, situation diagnosis and correction, organizational restructuring, intensive training with role play, skill development and feedback.	Moderate	12	4	10	7	22	18	7 = +, 2 = 0	5 = +	4 = +
Lee et al.(2014)[38]	A systematic review of alcohol interventions among workers in male-dominated industries	PeerCare group intervention addressing workplace behaviours and attitudes toward substance use through peer and managerial support + random drug testing (Miller et al., 2007); Drug-free workplace intervention program (workplace alcohol and/or drug policy and employee assistance services) (Wickizer et al., 2004); PeerCare group intervention addressing workplace attitudes, and training employees to recognize and refer co-workers with alcohol problems (Spicer & Miller, 2005)	Moderate	0	0	3	3	0	0		3 = +	
Lerner et al. (2013)[48]	A systematic review of the evidence concerning the economic impact of employee-focused health promotion and wellness programs	onsite program including modified duties and job placement, injury prevention, nurse case manager, training of clinical staff, improved communication among stakeholders	High	0	1	1	6	0	16	1 = +	2 = +	
Montano et al. (2014)[39]	Effects of organisational-level interventions at work on employees' health: a systematic review	Enhancement of leadership, participatory management, performance feedback (Anderzen 2005). Prevention team of all stakeholders for reducing occupational injuries (Porru 2011).	Moderate	7	2	2	2	3	2	1 = +	1 = +	2 = +

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Palmer et al. (2012)[48]	Effectiveness of community- and workplace-based interventions to manage musculoskeletal-related sickness absence and job loss: a systematic review. [Review]	Multi-system interaction to support clinical and occupational needs); Multi-method to remove barriers to RTW; Enhanced support - workplace support; consultation to other stakeholders; Resource use and coordination	High	0	1	1	0	0	0	1 = +		
Patterson et al. (2010)[40]	Systematic review of the links between human resource management practices and performance. [Review]	job enhancements; realistic timely communication; +ve attendance; group recognition, public celebration; source of acknowledgement	Moderate	16	2	2	1	2	1	2+	2+	1+
Richardson & Rothstein (2008)[37]	Effects of Occupational Stress Management Intervention Programs:A Meta-Analysis	Absenteeism: Staff meetings increased participation, Audio tapes increased relaxation, Leader facilitation - SMI-CBT, Relaxation/ Disensitivity. Productivity: 15 minutes break with relaxation, use of ACT - CBT to enchance emotional coping	High	1	0	2	0	14	11	2 = 0		
Rivilis et al. (2008)[45]	Effectiveness of participatory ergonomic interventions on health	participatory ergonomics	High	6	6	2	0	1	0	2 = +		
Seymour & Grove (2009)[18]	Workplace interventions for people with common mental health problems: Evidence review and recommendations	Teach skills to enhance social support and problem-solving, weekly stress management sessions, aerobic exercise sessions, communication training. Training sessions in peroblem-solving, personal and organizational stress reduction.	High	1	1	2	4	5	3	1 = +		1 = +
Tompa (2008)[50]	A Systematic Review of Disability Management Interventions with Economic Evaluations	Four disability management options: standard care, clinical intervention, occupational intervention, and combined clinical and occupation intervention (Sherbrooke model) (Loisel); three disability management options: standard care, min-intervention (interview with a physician to provide information and encourage physical activity), and mini-intervention with a worksite visit by a physiotherapist (practical worksite instruction and encourage involvement of supervisor and company healthcare professionals) (Karjalainen)	High	0	0	2	0	0	0	2 = +		1 = +
Webb(2009)[51]	A systematic review of work-place interventions for alcohol-related problems	Random allocation to (1) brief counselling or (2) intensive counselling (3) no intervention for employees positive to alcohol screen (Hermansson et al., 1998); PeerCare group intervention addressing workplace attitudes, and training employees to recognize and refer co-workers with alcohol problems (Spicer & Miller, 2005)	High	0	0	1	2	0	0	1 = 0	1 = +	
				66	39	53	34	71	65	30 = +	19 = +	13 = +
										1 = -	NA	NA
										8 = 0	NA	1 = 0

Mental health

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Bambra et al (2007)[53]	The psychosocial and health effects of workplace reorganisation 2. A systematic review of task restructuring interventions	Primary nursing, introduction of production line, more and smaller teams with sub-supervisors; participatory committee, more on the job training and ergonomic improvements. Increased task variety, more teamwork, more personnel, more time to plan work, bonus scheme.	High	5	4	4	1	4	0	1=0		
Bambra et al (2008)[54]	Shifting schedules: The health effects of reorganizing shift work	Self-scheduling shifts	High	1	0	4	2	1	3	2=0, 1=-		
Cancelliere et al (2011)[11]	Are workplace health promotion programs effective at improving	improving supervisor/manager knowledge regarding mental health in the workplace; single 60 minute session + 120 minute active listening training with role playing (Takao, 2006); Participatory intervention meetings with HR to discuss environmental (improvements, facilitators & supervisors training in mental health, facilitator supported and sustained employee autonomous activities, team-based problem solving, shared work related goals (Tsutsumi, 2009)	High	1	3	2	3	1	1	1=+		3=+
Corbiere et al (2009)[12]	A systematic review of psychological return-to-work interventions for people with mental health problems and/or physical injuries	"Interventions are most often secondary. There is a trend toward combining intervention levels (individual, group and organizational), the utilization of participatory research in adopting psychosocial interventions is important. "	Moderate	3	1	0	3	0	0	3=+, 1=0		1=+
Czbala et al (2011)[21]	Psychosocial Interventions in Workplace Mental Health Promotions	Interpersonal communication skills training, developmental EI training	High	2	4	2	1	7	4			1=+
Doki et al. (2015)[13]	Psychological Approach of Occupational Health Service	Work-related problem solving skills and/or CBT.	High	0	10	0	3	0	0	3=+		
Ebrahim et al. (2014)[18]	Psychotherapy for Depression in Claimants Receiving Wage Replacement Benefits	Work-focused CBT vs. standard	Moderate	0	1	0	2	0	0	1=+	1=+	
Egan et al. (2007)[55]	The psychosocial and health effects of workplace reorganisation. 1. A A systematic review of organisational level interventions that aim to increase employee control	Consultative committee (employees, managers and researchers) to discuss organizational change. Concurrent health promotion programme (smoking cessation and physical activity) and psychosocial skills training. Stress reduction "working committee" comprised of worksite supervisors, personnel staff and corporate medical staff. More and smaller teams with sub-supervisors and more on the job training; and ergonomic improvements. Participatory ergonomics team.	High	5	2	3	2	2	1	2=+		1=+

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Manage-ment	Wellness	Absence	Cost	Produc-tivity
Furlan et al (2011)[28]	Systematic review of intervention practices for depression in the workplace	Labour expert advice about work processes including decreasing demand and increasing control, work stress, time-management, etc (Blonk). Stress reduction program with supervisors asked to reduce job stressors (Kawakami)	High	2	1	0	5	3	2	4=+	3=+	1=0
Giga et al. (2003)[30]	The UK Perspective: A review of research on organizational Stress Management Interventions	job redesign and particapatory intervention, changes to physical environment characteristics	low	1	2	0	2	2	2	2=+		1=+
LaMontagne (2007)[31]	A systematic review of the job stress intervention evaluation literature, 1990-2005	education discussion group and action plan program, situation diagnosis and correction, organizational restructuring, intensive training with role play, skill development and feedback.	Moderate	12	4	10	7	22	18	7=+	2=+	2=+
Lee et al. (2014)[32]	Effective interventions for mental health in male-dominated workplaces	distribute information to workers about mental health, provide additional social support, offer access to treatment, educate managers about mental health, target individuals at high risk for absenteeism, reduce excessive workloads and relief from heavy workloads personalized feedback from occupational health, medical staff, access to local occupational health services. Partcipatory workplace mental health and productivity program (problem solving, team based, job processes)	Moderate	0	0	0	3	0	0	2=+		1=+
Lee et al.(2014)[29]	A systematic review of alcohol interventions among workers in male-dominated industries	PeerCare group intervention addressing workplace behaviours and attitudes toward substance use through peer and managerial support + random drug testing (Miller et al., 2007); Drug-free workplace intervention program (workplace alcohol and/or drug policy and employee assistance services) (Wickizer et al., 2004); PeerCare group intervention addressing workplace attitudes, and training employees to recognize and refer co-workers with alcohol problems (Spicer & Miller, 2005)	Moderate	0	0	3	3	0	0		3=+	
Lerner et al. (2013)[44]	A systematic review of the evidence concerning the economic impact of employee-focused health promotion and wellness programs	onsite program including modified duties and job placement, injury prevention, nurse case manager, training of clinical staff, improved communication among stakeholders	High	0	1	1	6	0	16	3=+	4=-	2=+
McLeod (2010)[34]	Effectiveness of Workplace Counselling	Workplace counselling, CBT, client-centred, brief ecoletic	Moderate	0	0	0	6	1	0	5=+	3=+	6=+, 1=0
Montano et al. (2014)[35]	Effects of organisational-level interventions at work on employees' health: a systematic review	Enhancement of leadership, participatory management, performance feedback (Anderzen 2005). Prevention team of all stakeholders for reducing occupational injuries (Parru 2011).	Moderate	7	2	2	2	3	2	2=+		

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Manage-ment	Wellness	Absence	Cost	Produc-tivity
Nieuwenhui-jsen et al. (2014)[39]	Interventions to improve return to work in depressed people	Work and Health Initiative (WHI) intervention provided by EAP counsellors, including work coaching and modification, care coordination, cognitive-behavioural strategies (Lerner);	High	0	1	0	1	0	0	1 = +		
Nijp et al. (2012)[40]	systematic review on the association between employee worktime control and work-non-work balance, health and well-being and job-related outcomes	WTC (Work Time Control) including: start/end time control (flextime), when to take a break, when to take vacation or a day off, distribution of workdays of the work week, when and whether to work overtime.	Moderate	7	0	0	1	2	3		1=0	
Patterson et al. (2010)[42]	Systematic review of the links between human resource management practices and performance. [Review]	job enhancements; realistic timely communication; +ve attendance; group recognition, public celebration, source of acknowledgement	Moderate	16	2	2	1	2	1		1=0	1=+
Pomaki et al. (2012)[43]	Workplace-Based Work Disability Prevention Interventions for Workers with Common Mental Health Conditions: A Review of the Literature	Group rehabilitation program, problem-solving-focused psychological intervention, multimodal guideline-based care by Ops (e.g. stress inoculation, problem solving, work-related interventions), structured telephone-based intervention	High	0	2	0	2	2	0	2=0, 1=+	1=+, 1=-	1=+, 1=-
Seymour & Grove (2009)[18]	Workplace interventions for people with common mental health problems: Evidence review and recommendations	Teach skills to enhance social support and problem-solving, weekly stress management sessions, aerobic exercise sessions, communication training. Training sessions in perobiem-solving, personal and organizational stress reduction.	High	1	1	2	4	5	3	2=+		2=+
Skeffington et al. (2013)[23]	The primary prevention of PTSD: A systematic review	Pre-deployment stress debriefing (e.g. role of and how to access supports, education about stress, managing stressful thinking) (Sharpley); Cognitive-behavioural stress management (4 weekly sessions, e.g. education, relaxation techniques, problem-solving and communication skills) (Sijanic-Voloder)	Moderate	0	1	0	2	1	0	1=0		1=+
van Vilsteren et al. (2015)[41]	Workplace interventions to prevent work disability in workers on sick leave (Review)	Worksite assessment and work adjustments based on methods used in participatory ergonomics (Anema/Steenstra); Early workplace-based intervention consisting of an interview focused on the social and occupational situation, including possible adaptation at work, ergonomic assessment and improvements (Arnetz); Integrated care intervention coordinated by a clinical occupational physician, based on participatory ergonomics and a graded activity program (Lambeek); Visit to OP and participatory ergonomics evaluation (Loisel)	High	1	5	0	1	1	0	1=+		

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Manage-ment	Wellness	Absence	Cost	Produc-tivity
Webb (2009)[23]	A systematic review of work-place interventions for alcohol-related problems	Random allocation to (1) brief counselling or (2) intensive counselling (3) no intervention for employees positive to alcohol screen (Hermansson et al., 1998); PeerCare group intervention addressing workplace attitudes, and training employees to recognize and refer co-workers with alcohol problems (Spicer & Miller, 2005)	High	0	0	1	2	0	0	2=0		1=+
				64	47	36	65	59	56	40=+	13=+	24=+
										1=-	5=-	1=-
										9=0	2=0	2=0

Stress Management

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Aas et al (2009)[4]	Workplace interventions for neck pain in workers (Review)	Participatory ergonomics. Workers identified problems, planned and evaluated changes and implemented them in collaboration with management and technical staff. Regular meetings for education and to standardize working methods.	High	1	1	0	0	1	0	1+		
Aust & Ducki (2004)[40]	Comprehensive Health Promotion Interventions at the Workplace: Experiences With Health Circles in Germany	Health circles are discussion groups, formed at the workplace, to develop change options for the improvement of potentially harmful working conditions. The aim of the circle meetings is to deal with working conditions viewed by employees to be highly demanding or somehow problematic.	Moderate	7	0	4	0	7	5	4=+, 2=0, 1=-		
Bambra et al (2007)[33]	The psychosocial and health effects of workplace reorganisation 2. A systematic review of task restructuring interventions	Primary nursing, introduction of production line, more and smaller teams with sub-supervisors; participatory committee, more on the job training and ergonomic improvements. Increased task variety, more teamwork, more personnel, more time to plan work, bonus scheme.	High	5	4	4	1	4	0	1 = +, 3 = 0		
Bambra et al (2008)[34]	Shifting schedules: The health effects of reorganizing shift work	Self-scheduling shifts	High	1	0	4	2	1	3	1=0		
Bond et al (2006)[28]	A business case for the Management Standards for stress	"Greater control leads to better performance (objectively measured) better performance ratings, less absenteeism and less turnover intention. Better support leads to better performance (objective), better performance ratings less absenteeism and less turnover intention. Better work relationships lead to less withdrawal behaviours, better team performance, less absenteeism, less turnover intention. Well-designed roles leads to less work withdrawal, better self-rated performance and less turnover intention. Lower demands lead to better performance (lab studies), better performance ratings and less absenteeism. More effective change management and communication leads to better performance ratings, less absenteeism, less turnover intention.	Moderate	4	0	0	0	1	0	1=+		1=+
Brown et al. (2011)[37]	Does Physical Activity Impact on Presenteeism and Other Indicators of Workplace Well-Being?	To evaluate the impact physical activity has on employee well-being and presenteeism.	Moderate	0	0	0	0	3	3	3=0		2=+, 1=0
Cancelliere et al (2011)[41]	Are workplace health promotion programs effective at improving	extra rest break time for workers engaged in highly repetitive work	High	1	3	2	3	1	1			1=+

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Manage-ment	Wellness	Absence	Cost	Produc-tivity
Caulfield (2004)[27]	A review of occupational stress interventions in Australia	Organizational: job design to to improve working conditions, surveillance of psychological disorders and risk factors Individual: information, dissemination, education and training. Increase utilization of work counselor. Responsibility: Management, counselor, individuals	Moderate	1	1	1	0	1	0		1=+	
Conn et al. (2009)[28]	Meta-Analysis of Workplace Physical Activity Interventions	physical activity	Low	0	0	0	0	1	1	1=0		
Czbala et al (2011)[21]	Psychosocial Interventions in Workplace Mental Health Promotions	working conditions and lifestyle changes,	High	2	4	2	1	7	4	4=+		4=+
Edwards et al. (2002)[29]	A systematic review of stress and stress management interventions for mental health nurses	Staff development training (EG1), Five workshops (n D 70)	Low	0	0	0	0	1	0			1=+
Edwards et al. (2003)[30]	A systematic review of stress and stress management interventions for mental health nurses	Behavioural training therapy aimed at improving nurses' preparation for theirapeutic tasks by thelping them develop skills and knowledge.	Low	0	1	0	0	1	1	1=+		1=+
Egan et al. (2007)[24]	The psychosocial and health effects of workplace reorganisation. 1. A A systematic review of organisationalllevel interventions that aim to increase employee control	Consultative committee (employees, managers and researchers) to discuss organizational change. Concurrent health promotion programme (smoking cessation and physical activity) and psychosocial skills training. Stress reduction "working committee" comprised of worksite supervisors, personnel staff and corporate medical staff. More and smaller teams with sub-supervisors and more on the job training, and ergonomic improvements	High	5	2	3	2	2	1	2=+		1=+
Furlan et al (2011)[25]	Systematic review of intervention practices for depression in the workplace	Labour expert advice abour work processes including decreasing demand.	High	2	1	0	5	3	2	3=+	1=+	
Giga et al. (2003)[26]	The UK Perspective: A review of research on organizational Stress Management Interventions	job redesign and particapatory intervention, changes to physical environment characteristics	low	1	2	0	2	2	2	1=+, 1=0		
Gilbody et al. (2006)[27]	Can we improve the morale of staff working in psychiatric units? A systematic review	Change to primary care nursing model, manager support, advice on core skills and interprofessional communication training (Mechior 1996); Change to continuous care ward vs intake and discharge ward (Long 1990), Empathetic skill training X4 one day workshops focus on better patient communication skills (Smoot & Gonzales 1995)	High	1	2	1	0	1	0	1=-, 1=0		

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Manage-ment	Wellness	Absence	Cost	Produc-tivity
LaMontagne (2007)[31]	A systematic review of the job stress intervention evaluation literature, 1990-2005	integrated tertiary-level intervention with primary and/or secondary; 3 years; included intervention at physical work environment (E), organisational (O); at the interface of organisation and individual (O/I), and individual (I) (Adkins 2000). education discussion group and action plan program (Eriksson, 1992).	moderate	12	4	10	7	22	18	15=+, 6=0	9=+	7=+,
McLeod (2010)[34]	Effectiveness of Workplace Counselling	To examine the impact of workplace counselling services on mental health and wellbeing, work-related attitudes and behaviour, and absences due to sickness.	Moderate	0	0	0	6	1	0	1=+		
Montano et al. (2014)[39]	Effects of organisational-level interventions at work on employees' health: a systematic review	Iterative injury risk identification, assessment and control process Various hazard controls implemented including increased rate of daily rotation to reduce repetitive strain (Carnivick 2002). Identification of factors perceived by employees as causes of stress at work, job redesign, and active involvement of employees for improving organization (Dahl-Jorgensen 2005).	moderate	7	2	2	2	3	2	2=+, 1=0		
Nijp et al. (2012)[40]	systematic review on the association between employee worktime control and work-non-work balance, health and well-being and job-related outcomes	There are theoretical and empirical reasons to view worktime control as a promising tool for the maintenance of employees work-non-work balance, health and well-being, and job-related outcomes. However, the current state of evidence allows only very limited causal inferences to be made.	Moderate	7	0	0	1	2	3	2=+		
Odeen et al. (2013)[41]	Systematic review of active workplace interventions to reduce sickness absence	"1-Eriksen: Stress management training 2-Brox: Stress management, nutrition and exercise 3-Eriksen: Exercise with stres management 4-Tveito: Exercise, stress management training, and ergonomic examination of workplace"		0	0	0	0	4	0	4=0		
Patterson et al. (2010)[42]	Systematic review of the links between human resource management practices and performance. [Review]	1: team planning approach MD's and RN's; redesign of ER; creation of functional teams; 2: increase autonomy, variety, feedback, enrichment of jobs	moderate	16	2	2	1	2	1	2=+	1=+	2=+
Pelletier et al. (2009)[36]	A review and analysis of the clinical and cost-effectiveness studies of comprehensive health promotion and disease management programs at the worksite: Update VII 2004-2008	1 - Highmark wellness program includes HRA, both online and onsite stress management education programs	Moderate	1	0	0	0	1	1		1=+	
Pereira et al. (2015)[48]	The impact of onsite workplace health-enhancing physical activity interventions on worker productivity: a systematic review	"Programme length: 12 weeks 1-Therapeutic yoga weekly hour-long sessions, 12h total 2-Mindfulness-based intervention weekly hour-long sessions and a 2 h mindfulness intensive practice at week 10, 14 h total	High	0	0	0	0	1	3	1=0		1=+

Systematic Review	Title	Intervention In Studies Reporting on Outcomes of Interest	Quality Score	Number of Studies by Psychosocial Risk Factor						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Manage-ment	Wellness	Absence	Cost	Produc-tivity
Pomaki et al. (2012)[41]	Workplace-Based Work Disability Prevention Interventions for Workers with Common Mental Health Conditions: A Review of the Literature	Group rehabilitation program, problem-solving-focused psychological intervention, multimodal guideline-based care by Ops (e.g. stress inoculation, problem solving, work-related interventions), structured telephone-based intervention	High	0	2	0	2	2	0	1=0. 1=+ve	1=+ve, 1=-	
Richardson & Rothstein (2008)[32]	Effects of Occupational Stress Management Intervention Programs:A Meta-Analysis	Absenteeism: Staff meetings increased participation, Audio tapes increased relaxation, Leader facilitation - SMI-CBT, Relaxation/ Disensitivity: Productivity: 15 minutes break with relaxation, use of ACT - CBT to enchance emotional coping	High	1	0	2	0	14	11	7 = 0		7 = +
Rivilis et al. (2008)[43]	Effectiveness of participatory ergonomic interventions on health	Participatory ergonomics	High	6	6	2	0	1	0	1=+		
Seymour & Grove (2009)[18]	Workplace interventions for people with common mental health problems: Evidence review and recommendations	Training sessions in peroblem-solving, personal and organizational stress reduction.	High	1	1	2	4	5	3	2=+, 1=0		2=+, 1=0
Skeffington et al. (2013)[23]	The primary prevention of PTSD: A systematic review	Pre-deployment stress debriefing (e.g. role of and how to access supports, education about stress, managing stressful thinking) (Sharpley); Cognitive-behavioural stress management (4 weekly sessions, e.g. education, relaxation techniques, problem-solving and communication skills) (Sijanic-Voloder)	Moderate	0	1	0	2	1	0	1=0		1=+ve
van der Klink et al. (2001) [33]	The Benefits of Interventions for Work-Related Stress	Organizational, Cognitive-behavioural, relaxation, multimodal, individual focus.	Low	0	0	0	0	7	0	7=0		
Van Dongen et al. (2011)[45]	Systematic review on the financial return of worksite health promotion programmes aimed at improving nutrition and/or increasing physical activity	Comprehensive health promotion intervention including stress management	High	0	0	0	0	1	12	1=0		
van Vilsteren et al. (2015)[22]	Workplace interventions to prevent work disability in workers on sick leave (Review)	Worksite assessment and work adjustments based on methods used in participatory ergonomics (Anema/Steenstra); Early workplace-based intervention consisting of an interview focused on the social and occupational situation, including possible adaptation at work, ergonomic assessment and improvements (Arnetz); Integrated care intervention coordinated by a clinical occupational physician, based on participatory ergonomics and a graded activity program (Lambeek); Visit to OP and participatory ergonomics evaluation (Loisel)	High	1	5	0	1	1	0	1=+		
				83	44	41	42	105	77	45=+	14=+	31=+
										2=-	1=-	N/A
										42=0	N/A	3=0

Wellness

Systematic Review	Title	Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Manage-ment	Wellness	Absence	Cost	Produc-tivity
Amiani et al. (2014)[38]	Does Physical Activity Have an Impact on Sickness Absence? A Review	Physical exercise versus 1 hour per week on coping, stress, nutrition versus CBT (Erikson); Weekly exercise class -light aerobic, muscle strengthening, stretching, classes regarding PA, nutrition and stress management. Control normal activities	High	0	0	0	0	0	2	1=0, 1=-		
Aust & Ducki (2004)[40]	Comprehensive Health Promotion Interventions at the Workplace: Experiences With Health Circles in Germany	Health circles are discussion groups, formed at the workplace, to develop change options for the improvement of potentially harmful working conditions. The aim of the circle meetings is to deal with working conditions viewed by employees to be highly demanding or somehow problematic.	Moderate	7	0	4	0	7	5	2=0, 3=+		1=+
Bambra et al (2008)[34]	Shifting schedules: The health effects of reorganizing shift work	Self-scheduling shifts	High	1	0	4	2	1	3	1=+, 1=-, 2=0		3=-
Brown et al. (2011)[37]	Does Physical Activity Impact on Presenteeism and Other Indicators of Workplace Well- Being?	Tveito and Eriksen: Aerobic exercises 1h 3X/wk, 15X1h/wk; health and lifestyle information and stress management training; examination of workplace, aerobics instructor with healthcare education; 9 mos; Eriksen: 2h/wk PE: 2X1h/wk aerobic exercise; unknown; IHP: 1 h/wk PE + 1 h/wk information about stress, coping, nutrition; instructors; SM cognitive-behavioral training; unknown; 12 wk Nurminen et al.[2002] intervention: 1 · 30 individual exercise prescription; 60 min group exercise session/wk, physiotherapist; 8 mo (26 sessions)	Moderate	0	0	0	0	3	3	3=0		2=+, 1=0
Cancelliere et al (2011)[41]	Are workplace health promotion programs effective at improving	extra rest break time for workers engaged in highly repetitive work	High	1	3	2	3	1	1	1=+		1=+
Chapman (2012)[42]	Meta-evaluation of worksite health promotion economic return	Wellness program participants vs non participant	High	0	0	0	0	0	2		1=+	1=+
Conn et al. (2009)[39]	Meta-Analyses of Workplace Physical Activity Interventions	Interventions at worksites versus not at worksites; interventions on paid time versus unpaid time	Low	0	0	0	0	1	1	1=+		
Czbala et al (2011)[31]	Psychosocial Interventions in Workplace Mental Health Promotions	working conditions and lifestyle changes,	High	2	4	2	1	7	4	3=+		1=+
Edwards et al. (2003)[35]	A systematic review of stress and stress management interventions for mental health nurses	Behavioural training therapy aimed at improving nurses' preparation for therapeutic tasks by helping them develop skills and knowledge.	Low	0	1	0	0	1	1	1=+		1=+

Systematic Review	Title	Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Egan et al. (2007)[39]	The psychosocial and health effects of workplace reorganisation. 1. A A systematic review of organisationallevel interventions that aim to increase employee control	Consultative committee (employees, managers and researchers) to discuss organizational change. Concurrent health promotion programme (smoking cessation and physical activity) and psychosocial skills training. Stress reduction "working committee" comprised of worksite supervisors, personnel staff and corporate medical staff. More and smaller teams with sub-supervisors and more on the job training; and ergonomic improvements	High	5	2	3	2	2	1	1=+		
Furlan et al. (2011)[28]	Systematic review of intervention practices for depression in the workplace	Labour expert advice abour work processes including decreasing demand.	High	2	1	0	5	3	2	2=+	1=+	
Giga et al. (2003)[30]	The UK Perspective: A review of research on organizational Stress Management Interventions	job redesign and particapatory intervention, changes to physical environment characteristics	low	1	2	0	2	2	2	1=0, 1=+		1=+
Kuoppala et al. (2008)[43]	Work health promotion, job well-being, and sickness absences--a systematic review and meta-analysis.	2 ergonomics using educational intervention, 2 exercise programs, 2 psychological interventions	Moderate	0	0	0	0	0	7	6=+		1=+
Kuoppala et al. (2008)[44]	Rehabilitation and Work Ability: A Systematic Literature Review	Interventions that address ergonomics and mental health, work design	Moderate						1	1=+		
LaMontagne (2007)[31]	A systematic review of the job stress intervention evaluation literature, 1990-2005	integrated tertiary-level intervention with primary and/or secondary; 3 years; included intervention at physical work environment (E), organisational (O), at the interface of organisation and individual (O/I), and individual (I) (Adkins 2000). education discussion group and action plan program (Eriksson, 1992).	moderate	12	4	10	7	22	18	11=+, 7=0	6=+	6=+, 1=0
Lerner et al. (2013)[45]	A systematic review of the evidence concerning the economic impact of employee-focused health promotion and wellness programs	onsite program including modified duties and job placement, injury prevention, nurse case manager, training of clinical staff, improbed communication among stakeholders	High	0	1	1	6	0	16	9=+	5=+, 3=-	2=0, 5=+
Montano et al. (2014)[29]	Effects of organisational-level interventions at work on employees' health: a systematic review	Iterative injury risk identification, assessment and control process.Various hazard controls implemented including increased rate of daily rotation to reduce repetitive strain (Carnvick 2002). Identification of factors perceived by employees as causes of stress at work, job redesign, and active involvement of employees for improving organization (Dahl-Jorgensen 2005).	moderate	7	2	2	2	3	2	1=+	1=+	2=+
Nijp et al. (2012)[46]	systematic review on the association between employee worktime control and work-non-work balance, health and well-being and job-related outcomes	WTC (Work Time Control) including: start/end time control (flextime), when to take a break, when to take vacation or a day off, distribution of workdays of the work week, when and whether to work overtime.	Moderate	7	0	0	1	2	3	2=+	1=0	

Systematic Review	Title	Intervention Description	Quality Score	Number of Studies Addressing Psychosocial Risk Factors						Outcomes for Studies that Include a Job Participation Component		
				Job Control	Job Demands	Social Support	Mental Health	Stress Management	Wellness	Absence	Cost	Productivity
Patterson et al. (2010)[42]	Systematic review of the links between human resource management practices and performance. [Review]	1: team planning approach MD's and RN's; redesign of ER; creation of functional teams, 2: increase autonomy, variety; feedback; enrichment of jobs	moderate	16	2	2	1	2	1	1=+	1=+	
Pelletier et al. (2009)[39]	A review and analysis of the clinical and cost-effectiveness studies of comprehensive health promotion and disease management programs at the worksite: Update VII 2004-2008	Despite a decrease in methodological quality during this period, the update on studies continues to demonstrate promising clinical and/or cost effectiveness of worksite programs.	Moderate	1	0	0	0	1	1		1=+	
Pereira et al. (2015)[46]	The impact of onsite workplace health-enhancing physical activity interventions on worker productivity: a systematic review	Yoga, mindfulness	High	0	0	0	0	1	3			3=+
Richardson & Rothstein (2008)[32]	Effects of Occupational Stress Management Intervention Programs:A Meta-Analysis	Absenteeism: Staff meetings increased participation, Audio tapes increased relaxation, Leader facilitation - SMI-CBT, Relaxation/ Disensitivity. Productivity: 15 minutes break with relaxation, use of ACT - CBT to enchance emotional coping	High	1	0	2	0	14	11	7=0		4=+
Seymour & Grove (2009)[18]	Workplace interventions for people with common mental health problems: Evidence review and recommendations	Training sessions in peroblem-solving, personal and organizational stress reduction.	High	1	1	2	4	5	3	2=+, 1=0		1=+, 1=0
Van Dongen et al. (2011)[43]	Systematic review on the financial return of worksite health promotion programmes aimed at improving nutrition and/or increasing physical activity	Comprehensive health promotion intervention including stress management	High	0	0	0	0	1	12	5=+, 1= mixte (Shistav), 4=-	2=+, 4=-	1=+, 2=-
				64	23	34	36	79	105	52=+	18=+	31=+
										6=-	7=-	5=-
										24=0	1=0	5=0
										1=mixed		

APPENDIX VII - COMMONLY USED VALIDATED INSTRUMENTS

Public Access Surveys

(Some of the resources require registration. Public access surveys are for non-commercial use, unless permission has been received by copyright owner. It is best to contact author or copyright holder to confirm intended use.)

GENERAL HEALTH

- Patient Health Questionnaire-PHQ-9
- Nottingham Health Profile
- Four-Dimensional Symptom Questionnaire 4DSQ

ANXIETY

- Generalized Anxiety Disorder 7 Item Scale (GAD-7)
- Hamilton Anxiety Rating Scale (HAM-A)
- Liebowitz Social Anxiety Scale (LSAS)
- Panic and Agoraphobia Scale (PAS)
- Short Health Anxiety Inventory (HAI-18)
- Social Phobia Inventory (SPIN)
- Taylor Manifest Anxiety Scale (TMAS)
- Zung Self-Rating Anxiety Scale (SAS)

DEPRESSION

- Major Depression Inventory (MDI)
- Montgomery-Asberg Depression Rating Scale (MADRS)
- Patient Health Questionnaire-PHQ-9
- Hamilton Rating Scale for Depression HRSD
- Depression scale of the Patient Health Questionnaire PHQ-9

WORK FUNCTIONING

- Health and Work Performance Questionnaire (HPQ), (Employee Version)
- Sheehan Disability Scale (SDS)
- The Copenhagen Burnout Inventory
- CDC NHWP Health and Safety Climate Survey (INPUTS™)
- CPH-NEW Healthy Workplace Participatory Program (HWPP) Toolkit
- Work Ability Index (WAI)

STRESS

- Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983)

Other Relevant Resources

- National Standard of Canada for Psychological Health and Safety in the Workplace
- Psychological Health and Safety: An Action Guide for Employers
- Guarding Minds at Work (Assessment Worksheets & Related Documents)
- Workplace Strategies for Mental Health
- Antidepressant Skills @ Work

Other Resources

Healthy Workplaces

- CDC-NIOSH Quality of WorkLife Questionnaire
- OHCOW StressAssess (based on Copenhagen Psychosocial Questionnaire in partnership with Mental Injury Tool conducted by Occupational Health Clinics for Ontario Workers (OHCOW)
- CDC NHWP Health and Safety Climate Survey (INPUTS™)

Researchers /Clinician Non-Commercial Access

(Note: It is best to contact author or copyright holder to confirm or register intended use.)

DEPRESSION

- Inventory of Depressive Symptomatology- IDS-SR

WORK FUNCTIONING

- Work Limitations Questionnaire 2 (WLQ)
- Work Productivity and Activity Impairment Questionnaire (WPAI)
- Return-to-Work Obstacles and Self-Efficacy Scale (ROSES) with Workers Suffering from a Common Mental Disorder or Musculoskeletal Disorder
- Work Accommodations and Natural Support Scale – WANSS

STRESS

Four-Dimensional Symptom Questionnaire 4DSQ
https://mental.jmir.org/article/downloadSuppFile/6545/41334

Proprietary Surveys

GENERAL HEALTH

- Short Form Health Survey SF-12
- Short Form Health Survey SF-36

DEPRESSION

- Beck Depression Inventory (BDI - 11)

WORK FUNCTIONING

- Endicott Work Productivity Scale (EWPS) (Endicott 1997)

STRESS

- Occupational Stress Inventory – Revised

Other Resources

Healthy Workplaces

- CDC-NIOSH Quality of WorkLife Questionnaire
- Occupational Health Clinics for Ontario Workers StressAssess
- CDC NHWP Health and Safety Climate Survey (INPUTS™)

APPENDIX VIII - GLOSSARY

Appraisal/performance management

Appraisal and performance management is an integrated human resources management strategy that seeks to support the mission, vision and values of the organisation. It may include goal setting, performance evaluations, absence management programs, coaching or similar interventions. Performance management is tied to compensation structures and motivational approaches such as bonuses or other performance pay and various approaches to enhancing communication and accountability.

Autonomous work groups

Autonomous workgroups are typically characterized as being employee-driven involvement in the management of day-to-day work. This can include control over pace, task distribution, training and recruitment. Under this framework, supervisors may be replaced by elected ‘‘team champions’’ or ‘‘contact people’’, that are accountable to the work group. The goal of this intervention approach is to increase skill variety and worker participation, to enrich jobs and reduce individualized, and repetitive tasks[53].

Communication

Communication includes all vehicles that organizations and their employees use to exchange information, form understandings, coordinate activities, exercise influence, socialise, and generate and maintain systems of beliefs, symbols and values. Organisations have both formal and informal communication systems. The formal communications system is an integral part of the organisational structure. They include, for example, policies, procedures, performance management processes and management information systems. The informal communication system emerges from day-to-day interaction among organisational members. Ties in the informal network are based on proximity, friendship, common interests and political benefits more than formal job duties.

Employee/family friendly Policies

A ‘work and family’ or ‘family friendly workplace’ is one that recognises non-work responsibilities of employees, and implements policies that allow employees to simultaneously fulfil work and family responsibilities. Typically, family-friendly policies are designed to minimise the impact of work on family life. Interventions could include extended maternity/paternity leaves, sickness leave, compassionate leave, career breaks, flexitime, part-time work, job sharing and flexible days off.

Evidence level, Evidentiary Support

A best-evidence synthesis considers quality, quantity and consistency in discussing evidentiary support. In higher quality reviews we have used the language from the authors of the cited

systematic review. So if the systematic review authors suggest they have "moderate evidence" that is what we cite in this review.

Job Control

Job control generally refers to the level of freedom permitted to the worker in deciding how to meet job demands or how to perform tasks. It includes two related psychosocial working conditions, skill discretion and decision authority. It was conceptualized that the opportunity to use skills and make decisions would reduce possible adverse effects of heavy psychological demands.[72] According to the Job Demands-Control-Support model, the highest risk of poor psychological well-being and ill-health occurs in jobs with high demands, low control and low social support.[73]

Job Demands

Job demands refer to the physical, psychological, social, or organizational aspects of the job that require sustained effort or coping skills. Examples include cognitive demands, emotional demands, time demands, or repetitive work. Job demands are not necessarily negative, however they become job stressors when there is insufficient opportunity for the employee to recover adequately. Demands that are too low may also cause stress.[73]

Job design

Job design refers to the outcome of the work design process. It is focused on the tasks required, and methods of accomplishing the tasks. It may include analysis of job demands, interaction with other job categories, reporting structure, skill requirements and work context (e.g. physical environment). Other terms often used as synonymous for job design include 'work design' and 'job' or 'work structuring'.

Job Retention or Job Embeddedness

Job retention interventions include at least one of three primary factors: job fit, job linkage and sacrifice.[74] Job fit refers to how well the knowledge, skills, abilities and other attributes of a worker fit with the demands of any job. It may also refer to psychosocial fit with the work group or organization. Interventions may include recruiting methods, job design, development opportunities and training to improve job fit. Linkage refers to how many ties the employee has to the work group and organization. Interventions may include mentoring schemes, team-based work designs, career development, emphasis on organizational communication and consultation. Sacrifice refers to losses an employee may incur if they were to leave a position or organization. It includes incentives linked to length of service, work-based community activities, workplace facilities e.g. childcare, gym, provision of health services, opportunity for succession planning[75].

Job Stressors, Challenge Stressors and Hindrance Stressors

Job stressors in the literature are sometimes segmented in the research literature between challenge and hindrance stressors. Challenge stressors include workload, time pressure, job

scope and level of responsibility. Hindrance stressors include role ambiguity, role conflict , job insecurity and resource inadequacy. Hindrance stressors are associated with more negative outcomes than challenge stressors. However, both types of stressors are related to psychological strain.

Primary Care Nursing

Primary nursing and personal care-giving are patient-orientated care systems in which each patient is assigned to an individual nurse/caregiver who takes primary responsibility for the care of that patient. Care is therefore based on patient need rather than on the needs of the nursing ward. The intervention in this case aims to increase the variety of tasks undertaken and indirectly increases the decision latitude, autonomy and control of the nurses/caregivers.[53]

Social Support

Workplace social support interventions are any intervention intended to directly (e.g. supportive counselling) or indirectly (e.g. supportive workplace policies) support the worker. This may include improved supervisory quality, improved peer interaction or training to increase social skills. We included any intervention intended to directly (e.g. supervisory training) or indirectly (e.g., improved workplace structure) improve the quality of workplace supervision.[5]

Sickness Absence

Sickness absence can be indicative of illness, job-related issues contributing to work disability, or be related to personal or family demands. Understanding drivers of sickness absence is important to create effective, targeted solutions. Measuring sickness absence is complex. Sickness absence can be quantified and characterized with respect to its appearance (e.g. new/ongoing/concluded, recurrent), its course (e.g. continuous vs. interrupted spells), its duration, different levels of employment (e.g. full-time or part-time), and different types (e.g. sick listing, rehabilitation benefit, disability pension, personal or family demands). Duration of sickness absence can be quantified in calendar days or working days, full or partial absent days, or compensated days (this may differ from absent days). Costs of absenteeism are often reported in hours (number of hours absent during work hours or percentage of total work hours absent), the number of sick listed individuals, percentage of staff sick listed, both total and stratified into full-time or part-time. Sick-leave days/person is often expressed as some type of mean value. Sickness absence is best expressed using denominators that make sense e.g. population at work, and with large organizations could be stratified by departments or units.[76]

Staff Turn-Over

Staff turn-over for the purposes of this research refers to employees leaving their current employer, rather than moving to another position within the same organization. It can be triggered by any event that prompts a re-appraisal of current employment circumstances including new opportunities for the employee or spouse, retirement, restructuring, perceived injustice, workplace bullying, poor performance, or other undesired changes to working conditions. It could be unrelated to an employee 's current job, such as, family or career

aspirations, or an alternative job offer[77]. Since the reasons for turnover are so varied, the documenting long-term trends and other organizational changes is crucial to determining the success of any psychosocial hazard intervention.

Team Working

Team working is where workers are given more collective responsibility and decision-making power. Unlike autonomous work groups, responsibility is not shared and supervisory structures remain in place. This intervention is also designed to enhance collective coping and provide support within the workplace.[53]

Training and Development

Training programs are planned events that are created in a systematic fashion to address the acquisition of skills, rules, concepts or attitudes with the goal to improve performance in the work environment. The development of training programs typically include a comprehensive need assessment to consider the organisation, the job function, and the person performing the job in order to provide input for the design and evaluation of the training system. Following an in-depth understanding of tasks, knowledge, skills and abilities and training objectives, the next step is to consider designing the training program to achieve the objectives. Training requires a supportive learning environment to facilitate the learning of the knowledge, skills and abilities required for successful job performance.

Training evaluation

Training programs are normally evaluated against pre-determined objectives. The evaluation process centres around two procedures – establishing measures of success (criteria) and using a systematic evaluation design to determine both knowledge change and performance change. Needs assessment and performance measures are taken in advance of the training and followed by repeat measures following training. Objective and/or subjective measures may be used depending on the goals of the training program

Work design

Organisations have functions to accomplish if they are to meet their objectives. Those functions require several tasks, which are then grouped to form jobs undertaken by individuals. Employees typically are hired or trained to carry out their prescribed tasks and given a certain degree of discretion over how they do so.

Work organisation

Work organization encompasses job design, though typically includes a broader context linking jobs more explicitly to their organisational context. Work organization therefore considers the properties of the job commonly called ‘job characteristics’ including the variety of tasks in jobs and the amount of discretion job incumbents have in completing those tasks

.

Appendix IX – Ethics Certificate

The University of British Columbia

Certificate of Ethical Approval: Renewal for Harmonized Minimal Risk Behavioural Study

The University of British Columbia
Behavioural Research Ethics Board
#102, 6190 Agronomy Road
Vancouver, BC V6T 1Z3

Also reviewed and approved by:

- **Simon Fraser University**
- **University of Northern British Columbia**

Principal Investigator:	**Primary Appointment:**	**Board of Record REB Number:**	**REB Number:**
Marc I White	UBC/Medicine, Faculty of/Family Practice	H15-03130	H15-03130
Study Title: Identification, Control and Prevention of Work-related Psychosocial Hazards and Social Conditions Contributing to Mental Health Disorders and Prolonged Work Absence			
Approval Date: November 27, 2017		**Expiry Date: November 27, 2018**	
Research Team Members:	Merv Gilbert Lindsey Richardson Catherine Loughlin Kelly Williams-Whitt Clermont Dionne Shannon Wagner Izabela Schultz Asa Tjulin Dan Bilsker		
Sponsoring Agencies:	- WorkSafe BC - "Identification, control and prevention of work-related psychosocial hazards and social conditions contributing to mental health disorders and prolonged work absence"		
Documents included in this approval:	N/A		

This ethics approval applies to research ethics issues only and does not include provision for any administrative approvals required from individual institutions before research activities can commence.

The Board of Record (as noted above) has reviewed and approved this study in accordance with the requirements of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2, 2014).

The "Board of Record" is the Research Ethics Board delegated by the participating REBs involved in a harmonized study to facilitate the ethics review and approval process.

The application for ethical review and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.

This study has been approved either by the Board of Record's full REB or by an authorized delegated reviewer.

Appendix X - References

1. White M, Wagner S, Schultz IZ, et al. Modifiable workplace risk factors contributing to workplace absence across health conditions: A stakeholder-centered best-evidence synthesis of systematic reviews. *Work.* 2013;45:475-492.
2. Wagner S, White M, Schultz I, et al. Modifiable worker risk factors contributing to workplace absence: A stakeholder-centred best-evidence synthesis of systematic reviews. *Work.* 2013.
3. Williams-Whitt K, White MI, Wagner SL, et al. Job demand and control interventions: a stakeholder-centered best-evidence synthesis of systematic reviews on workplace disability. *The international journal of occupational and environmental medicine.* 2015;6:61-78.
4. Wagner SL, Koehn C, White MI, Harder HG, Schultz IZ, Williams-Whitt K. Mental health interventions in the workplace and work outcomes: A best-evidence synthesis of systematic reviews. *International Journal of Occupational and Environmental Medicine.* 2016;7:January.
5. Wagner SL, White MI, Schultz IZ, et al. Social Support and Supervisory Quality Interventions in the Workplace: A Stakeholder-Centered Best-Evidence Synthesis of Systematic Reviews on Work Outcomes. *The international journal of occupational and environmental medicine.* 2015;6:189-204.
6. White MI, Dionne CE, Warje O, et al. Physical Activity and Exercise Interventions in the Workplace Impacting Work Outcomes: A Stakeholder-Centered Best Evidence Synthesis of Systematic Reviews. *Int J Occup Environ Med.* 2016;7:61-74.
7. Green LW, Kreuter MW. *Health Promotion Planning: An Educational and Ecological Approach*. Mountain View, CA, Toronto, London: Mayfield Publishing Company; 1999.
8. White MI. *Toward an evidence-informed, theory-driven model for continuing medical education*, University of British Columbia; 2003.
9. Carroll LJ, Cassidy JD, Peloso PM, et al. Methods for the best evidence synthesis on neck pain and its associated disorders: the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. *Spine (Phila Pa 1976).* 2008;33:S33-38.
10. Slavin RE. Best evidence synthesis: an intelligent alternative to meta-analysis. *J Clin Epidemiol.* 1995;48:9-18.
11. Franche RL, Cullen K, Clarke J, Irvin E, Sinclair S, Frank J. Workplace-based return-to-work interventions: a systematic review of the quantitative literature. *J Occup Rehabil.* 2005;15:607-631.
12. Corbiere M, Shen J, Rouleau M, Dewa CS. A systematic review of preventive interventions regarding mental health issues in organizations. *Work.* 2009;33:81-116.
13. Doki S, Sasahara S, Matsuzaki I. Psychological approach of occupational health service to sick leave due to mental problems: a systematic review and meta-analysis. *Int Arch Occup Environ Health.* 2015;88:659-667.
14. McLeod J. The effectiveness of workplace counselling: A systematic review. *Counselling & Psychotherapy Research.* 2010;10:238-248.
15. Pomaki G, Franche RL, Murray E, Khushrushahi N, Lampinen TM. Workplace-based work disability prevention interventions for workers with common mental health conditions: a review of the literature. [Review]. *Journal of Occupational Rehabilitation.* 2012;22:182-195.
16. Seymour L, Grove B. Workplace interventions for people with common mental health problems: Evidence review and recommendations. London, England: British Occupational Health Research Foundation; 2005:96.
17. Westgaard RH, Winkel J. Occupational musculoskeletal and mental health: Significance of

rationalization and opportunities to create sustainable production systems - A systematic review. *Applied ergonomics.* 2011;42:261-296.

18. Ebrahim S. Psychotherapy for depression in claimants receiving wage replacement benefits: review of the evidence. *J Insur Med.* 2014;44:53-57.

19. Nieuwenhuijsen K, Faber B, Verbeek JH, et al. Interventions to improve return to work in depressed people. *Cochrane Database of Systematic Reviews.* 2014;12:CD006237.

20. Furlan AD, Gnam WH, Carnide N, et al. Systematic review of intervention practices for depression in the workplace. *Journal of Occupational Rehabilitation.* 2012;22:312-321.

21. Czabala C, Charzynska K, Mroziak B. Psychosocial interventions in workplace mental health promotion: an overview. *Health Promot. Int.* 2011;26 Suppl 1:i70-i84.

22. Lee NK, Roche A, Duraisingam V, Fischer JA, Cameron J. Effective interventions for mental health in male-dominated workplaces. *Mental Health Review Journal.* 2014;19.

23. Skeffington PM, Rees CS, Kane R. The primary prevention of PTSD: a systematic review. *J Trauma Dissociation.* 2013;14:404-422.

24. Lee NK, Roche AM, Duraisingam V, Fischer J, Cameron J, Pidd K. A Systematic Review of Alcohol Interventions Among Workers in Male-Dominated Industries. *Journal of Men's Health.* 2014;11:53-63.

25. Webb G, Shakeshaft A, Sanson-Fisher R, Havard A. A systematic review of work-place interventions for alcohol-related problems. *Addiction.* 2009;104:365-377.

26. Bond FW, Flaxman PE, Loivette S. A business case for the management standards for stress. London, UK2006.

27. Caulfield N, Chang D, Dollard MF, Elshaug C. A Review of Occupational Stress Interventions in Australia. *International Journal of Stress Management.* 2004;11:149-166.

28. Edwards D, Hannigan B, Fothergill A, Burnard P. Stress management for mental health professionals: a review of effective techniques. *Stress and Health.* 2002;18:203-215.

29. Edwards D, Burnard P. A systematic review of stress and stress management interventions for mental health nurses. *J Adv Nurs.* 2003;42:169-200.

30. Giga SI, Noblet AJ, Faragher B, Cooper CL. The UK Perspective: A Review of Research on Organisational Stress Management Interventions. *Australian Psychologist.* 2003;38:158-164.

31. LaMontagne AD, Keegel T, Louie AM, Ostry A, Landsbergis PA. A systematic review of the job-stress intervention evaluation literature, 1990-2005. *Int. J. Occup. Environ. Health.* 2007;13:268-280.

32. Richardson KM, Rothstein HR. Effects of occupational stress management intervention programs: a meta-analysis. *J Occup Health Psychol.* 2008;13:69-93.

33. van der Klink JJ, Blonk RW, Schene AH, van Dijk FJ. The benefits of interventions for work-related stress. *Am J Public Health.* 2001;91:270-276.

34. van Holland BJ, Soer R, de Boer MR, Reneman MF, Brouwer S. Preventive occupational health interventions in the meat processing industry in upper-middle and high-income countries: a systematic review on their effectiveness. *International archives of occupational and environmental health.* 2015;88:389-402.

35. Verbeek J, Pulliainen M, Kankaanpaa E. A systematic review of occupational safety and health business cases. *Scandinavian journal of work, environment & health.* 2009;35:403-412.

36. Amlani NM, Munir F. Does physical activity have an impact on sickness absence? A review. *Sports*

Med. 2014;44:887-907.

37. Brown HE, Gilson ND, Burton NW, Brown WJ. Does physical activity impact on presenteeism and other indicators of workplace well-being? *Sports medicine (Auckland, N.Z.).* 2011;41:249-262.

38. Conn VS, Hafdahl AR, Cooper PS, Brown LM, Lusk SL. Meta-analysis of workplace physical activity interventions. *Am J Prev Med.* 2009;37:330-339.

39. Pelletier KR. A review and analysis of the clinical and cost-effectiveness studies of comprehensive health promotion and disease management programs at the worksite: Update VII 2004-2008. *Journal of Occupational and Environmental Medicine.* 2009;51:822-837.

40. Aust B, Ducki A. Comprehensive health promotion interventions at the workplace: experiences with health circles in Germany. *J Occup Health Psychol.* 2004;9:258-270.

41. Cancelliere C, Cassidy JD, Ammendolia C, Cote P. Are workplace health promotion programs effective at improving presenteeism in workers? A systematic review and best evidence synthesis of the literature. [Review]. *BMC Public Health.* 2011;11:395, 2011.

42. Chapman LS. Meta-evaluation of worksite health promotion economic return studies: 2012 update. *American Journal of Health Promotion.* 2012;26:TAHP1-TAHP12.

43. Kuoppala J, LamminpÃ¤Ã¤ A, Husman PÃ. Work health promotion, job well-being, and sickness absences--A systematic review and meta-analysis. *Journal of Occupational and Environmental Medicine.* 2008;50:1216-1227.

44. Lerner D, Rodday AM, Cohen JT, Rogers WH. A systematic review of the evidence concerning the economic impact of employee-focused health promotion and wellness programs. *J Occup Environ Med.* 2013;55:209-222.

45. van Dongen JM, Proper KI, van Wier MF, et al. Systematic review on the financial return of worksite health promotion programmes aimed at improving nutrition and/or increasing physical activity. [Review]. *Obesity Reviews.* 2011;12:1031-1049.

46. Schroer S, Haupt J, Pieper C. Evidence-based lifestyle interventions in the workplace--an overview. *Occup Med (Oxf).* 2014;64:8-12.

47. Ulrik Gensby TL, Krystyna Kowalski, Madina Saidj, Anne-Marie Klint Jorgensen, trine Filges, Emma irvin, Benjamin C Amick III, Merete Labriola. Workplace based disability management programs for promoting return-to-work. *Campbell Systematic Reviews.* 2012;8:153.

48. Kuoppala J, Lamminpaa A. Rehabilitation and work ability: a systematic literature review. [Review] [83 refs]. *Journal of Rehabilitation Medicine.* 2008;40:796-804.

49. Shaw W, Hong QN, Pransky G, Loisel P. A literature review describing the role of return-to-work coordinators in trial programs and interventions designed to prevent workplace disability. *J Occup Rehabil.* 2008;18:2-15.

50. Tompa E, de O, Dolinschi R, Irvin E. A systematic review of disability management interventions with economic evaluations. [Review] [19 refs]. *Journal of Occupational Rehabilitation.* 2008;18:16-26.

51. van Oostrom SH, Driessen MT, de Vet HC, et al. Workplace interventions for preventing work disability. *Cochrane Database Syst Rev.* 2009:Cd006955.

52. van Vilsteren M, van Oostrom SH, de Vet HC, Franche RL, Boot CR, Anema JR. Workplace interventions to prevent work disability in workers on sick leave. *Cochrane Database Syst Rev.* 2015:Cd006955.

53. Bambra C, Egan M, Thomas S, Petticrew M, Whitehead M. The psychosocial and health effects of workplace reorganisation. 2. A systematic review of task restructuring interventions. *J Epidemiol*

Community Health. 2007;61:1028-1037.

54. Bambra CL, Whitehead MM, Sowden AJ, Akers J, Petticrew MP. Shifting schedules: the health effects of reorganizing shift work. *Am J Prev Med.* 2008;34:427-434.

55. Carroll C, Rick J, Pilgrim H, Cameron J, Hillage J. Workplace involvement improves return to work rates among employees with back pain on long-term sick leave: a systematic review of the effectiveness and cost-effectiveness of interventions. [Review] [55 refs]. *Disability and rehabilitation.* 2010;32:607-621.

56. Egan M, Bambra C, Thomas S, Petticrew M, Whitehead M, Thomson H. The psychosocial and health effects of workplace reorganisation. 1. A systematic review of organisational-level interventions that aim to increase employee control. *J Epidemiol Community Health.* 2007;61:945-954.

57. Gilbody S, Cahill J, Barkham M, Richards D, Bee P, Glanville J. Can we improve the morale of staff working in psychiatric units? A systematic review. *Journal of Mental Health.* 2006;15:7-17.

58. Hodgkinson B, Haesler EJ, Nay R, O'Donnell MH, McAuliffe LP. Effectiveness of staffing models in residential, subacute, extended aged care settings on patient and staff outcomes. *Cochrane Database Syst Rev.* 2011:CD006563.

59. Montano D, Hoven H, Siegrist J. Effects of organisational-level interventions at work on employees' health: a systematic review. *BMC public health.* 2014;14:135.

60. Nijp HH, Beckers DG, Geurts SA, Tucker P, Kompier MA. Systematic review on the association between employee worktime control and work-non-work balance, health and well-being, and job-related outcomes. *Scandinavian journal of work, environment & health.* 2012;38:299-313.

61. Odeen M, Magnussen LH, Maeland S, Larun L, Eriksen HR, Tveito TH. Systematic review of active workplace interventions to reduce sickness absence. *Occup Med (Oxf).* 2013;63:7-16.

62. Patterson M, Rick J, Wood S, Carroll C, Balain S, Booth A. Systematic review of the links between human resource management practices and performance. [Review]. *Health Technology Assessment (Winchester, England).* 2010;14:1-334.

63. Rivilis I, Van Eerd D, Cullen K, et al. Effectiveness of participatory ergonomic interventions on health outcomes: a systematic review. *Applied ergonomics.* 2008;39:342-358.

64. Aas W, Tuntland H, Holte A, et al. Workplace interventions for neck pain in workers [Systematic Review]. *Cochrane Database of Systematic Reviews 2011.* 2011;4.

65. Kennedy CA, Amick BC, 3rd, Dennerlein JT, et al. Systematic review of the role of occupational health and safety interventions in the prevention of upper extremity musculoskeletal symptoms, signs, disorders, injuries, claims and lost time. *J Occup Rehabil.* 2010;20:127-162.

66. Palmer KT, Harris EC, Linaker C, et al. Effectiveness of community- and workplace-based interventions to manage musculoskeletal-related sickness absence and job loss: a systematic review. [Review]. *Rheumatology.* 2012;51:230-242.

67. Silverstein B, Clark R. Interventions to reduce work-related musculoskeletal disorders. *J Electromyogr Kinesiol.* 2004;14:135-152.

68. Pereira MJ, Coombes BK, Comans TA, Johnston V. The impact of onsite workplace health-enhancing physical activity interventions on worker productivity: a systematic review. *Occupational and environmental medicine.* 2015;72:401-412.

69. Willert MV, Thulstrup AM, Bonde JP. Effects of a Stress Management Intervention on Absenteeism and Return to work-results from a Randomized wait-list Controlled Trial. 2011;37:186-195.

70. Kant I, Jansen NWH, van Amelsvoort LGPM, van Leusden R, Berkouwer AJJoOR. Structured Early

Consultation with the Occupational Physician Reduces Sickness Absence Among Office Workers at High Risk for Long-Term Sickness Absence: a Randomized Controlled Trial. 2008;18:79-86.

71. Arends I, Bültmann U, Nielsen K, van Rhenen W, de Boer MR, van der Klink JJL. Process evaluation of a problem solving intervention to prevent recurrent sickness absence in workers with common mental disorders. *Social Science & Medicine.* 2014;100:123-132.

72. Karasek RA. Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative science quarterly.* 1979;24:285-308.

73. Karasek RAT, Tores. *Healthy Work: Stress, Productivity and the Reconstruction of Working Life*. New York: Basic Books; 1990.

74. Mitchell TR, Holtom BC, Lee TW, Sablynski CJ, Erez M. Why People Stay: Using Job EmbeddednessTo Predict Voluntary Turnover. *Academy of Management Journal.*44:1102-1121.

75. Mitchell TR, Lee TW. 5. The unfolding model of voluntary turnover and job embeddedness: Foundations for a comprehensive theory of attachment. *Research in organizational behavior.*189-246.

76. Elfering AJESJ. Work-related outcome assessment instruments. 2006;15:S32-S43.

77. Blackman DA, O'Donnell M, Teo STT. *Human Capital Management Research : Influencing Practice and Process*. Charlotte, N.C.: Information Age Publishing; 2016.