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Workplace-based Return-to-work Interventions:

A Systematic Review of the Quantitative and Qualitative Literature

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Workplace-based RTW Intervention Literature
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What is a systematic literature review?

- Research methodology which leads to a concise synthesis of the research evidence about a specific question
- Its strengths are...
 - Comprehensiveness of the search for studies
 - Methodological rigour
 - Evaluation of the quality of studies

Cette présentation a été effectuée le 23 octobre 2006, au cours du symposium "Prévenir l'incapacité au travail : un symposium pour favoriser l'action concertée" dans le cadre des Journées annuelles de santé publique (JASP) 2006. L'ensemble des présentations est disponible sur le site web des JASP, à l'adresse <http://www.inspq.qc.ca/jasp>.

Why do a systematic review and for whom?

... A systematic review is useful for busy people who are looking for the best evidence on a given question

- Useful to assist in developing evidence-based policies and in other decision-making processes
- Useful when many studies with small sample size can be pooled together to achieve adequate statistical power
- Useful to identify research gaps



It is impossible for any individual to keep up-to-date with the scientific literature



Distinctive features of our review

- Synthesis of both quantitative and qualitative literature

Quantitative research:

- **Effectiveness** of interventions
 - Identification of effective components of workplace-based interventions

Qualitative research:

- **Process** of interventions:
 - Social dynamics which impact the implementation of interventions



Distinctive features of our review

- Wider set of study designs than most other systematic reviews
- Participation of stakeholders at the outset, in the definition of the research question, and in the final step of knowledge transfer.





*Decide what the
central question is*



Our Question

- What workplace-based RTW interventions are effective for workers with pain-related conditions?
 - In reducing work disability duration
 - In improving quality of life of workers
 - In reducing costs associated with work disability
- In addressing workers' needs
- In addressing workplace issues



Literature search



Get together all the literature that could possibly relate to the question

The literature search

- 7 databases
- Peer-reviewed publications from established international research centers

Determine relevance



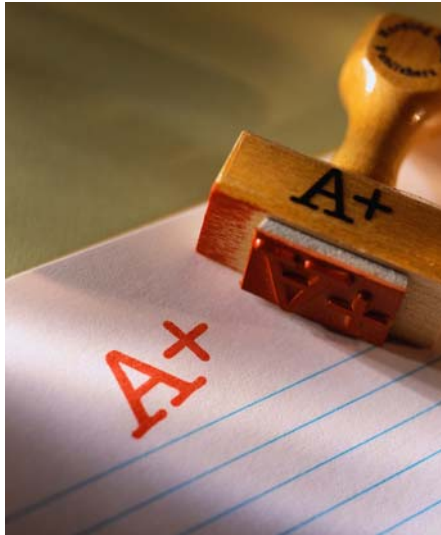
Sort out the stuff
that does relate

Inclusion and exclusion criteria

- Peer-reviewed quantitative studies of RTW interventions, initiated by the workplace, insurance companies, or healthcare providers with strong links with the workplace; Comparative study designs
- Workers with non-malignant pain-related conditions or workers receiving Workers' Compensation benefits for a lost-time claim
- Peer-reviewed qualitative studies of workers' and employers' experience of RTW
- 1990 to 2003
- English or French

Quality appraisal

Pick out the better stuff



Quality Appraisal Systems

- Quality appraisal for quantitative studies
 - Adapted from established quality appraisal systems (Carroll et al, 2004, Côté et al., 2001, Oxman & Guyatt, 1991, Smith et al., 2000, Zaza et al., 2000)
 - Consensus-based
 - Examples of dimensions assessed: Participation rates, control for confounders, statistical power.
 - Categories of quality: Low/Medium/High/ Very High
- Quality appraisal for qualitative studies
 - Based on established system (Spencer et al. 2003, National Centre for Social Research, U.K.)
 - Rigorous conduct in data collection, analysis, interpretation; credible, well-founded, plausible arguments



Data extraction and evidence synthesis

Combine the knowledge from the better studies



Evidence Synthesis

- Quantitative studies
 - Best Evidence Synthesis guidelines (Slavin, 1986,1995)
 - Quality
 - Quantity
 - Consistency
- Qualitative studies
 - Meta-ethnographic approach (Campbell et al. 2004, Noblit & Hare 1988)
 - Identification and re-interpretation of findings through 'Key Concepts'



From search to data extraction...

- From 4124 publications, a total of 68 were relevant, and 33 were of sufficient quality to be retained for data extraction



What we found

- Showing you the findings in two parts: first, the synthesis of the quantitative research

Quantitative research:

- **Effectiveness** of interventions
 - Identification of effective components of workplace-based interventions

Qualitative research:

- **Process** of interventions:
 - Social dynamics which impact the implementation of interventions



Outcomes

- **Work disability duration:** Time to first RTW, total work disability duration, recurrences; point-prevalence of working status. (Self-report and/or administrative data)
- **Associated costs:** Healthcare, wage replacement, intervention
- **Quality-of-life indices:** Condition-specific functional status, general physical/mental health, pain



Levels of Evidence

- Levels of evidence $\neq$ Effect size
- Levels of evidence are based on
 - Quality of studies
 - Quantity
 - Consistency(Agency for Healthcare Research and Quality, 2002)
- "Limited evidence" means few good studies; it can be overturned by future studies
- "Mixed evidence" is due to conflicting studies
- "Moderate" and "Strong" evidence are solid levels of evidence



Evidence synthesis of quantitative literature

- *Strong* evidence that **work accommodation** offers and **HCP-workplace contact** are effective in reducing work disability duration, and *moderate* evidence that they reduce associated costs
- *Moderate* evidence that interventions with the following components are effective in reducing work disability duration and associated costs
 - **Early contact with worker by the workplace**
 - **Ergonomic work site visits**
 - **RTW coordination**



Evidence synthesis of quantitative literature

- Moderate evidence that **labour-management** cooperation is associated with reduced work disability duration.
- Moderate evidence that **educational interventions** for managers and supervisors reduce work disability duration.
- Limited evidence that **people-oriented and safety-focused culture** are associated with reduced work disability duration.
- Evidence regarding **impact on quality of life** is **weaker** – Mixed or insufficient.
- No studies examined quality of *work* life as an outcome.



What we found

- Now, part two: the qualitative research

Quantitative research:

- **Effectiveness** of interventions
 - Identification of effective components of workplace-based interventions

Qualitative research:

- **Process** of interventions:
 - Social dynamics which impact the implementation of interventions



Evidence synthesis for qualitative studies

- **Return to work is a socially fragile event.**
 - The navigation of workers in the compensation and healthcare systems is often arduous, at a time when a worker is vulnerable.
 - Expectations of self reliance can be problematic when the worker feels fragile, unsure about process, and doesn't understand rules and terminology.
- **The need for mutual confidence among parties is critical...**even when procedures are standardized and workplace has a proactive approach to injury
 - Mutual confidence affects ideas about attribution of injury, magnitude of resources allocated to RTW, and prevention.



Evidence synthesis for qualitative studies

Social, physical, financial effects of modified work

- Social: Relationships with co-workers (difficult to ask for help, resentment about the 'easier' job, social dislocation)
- Physical: Physical arrangement of work: Designed by whom? Who pulls the load?
- Financial: costs, premium surcharges, and meaningful work
- Modified work can conflict with collective agreements (e.g. seniority)



Evidence synthesis for qualitative studies

■ **Supervisors play a key role in the RTW process.**

- Proximity to worker and day-to-day work conditions
- Maintain restrictions over time & production changes
- Manage co-worker issues, validate injury

■ **Rehabilitation and occupational health professionals are key to RTW success**

- Difficulties with model of direct physician contact: Problems with 'early', disconnect between physician & workplace, employers drawn into rehab.
- Rehab/occ health professionals as a bridge between the workplace and the healthcare system.



Evidence synthesis for qualitative studies

- **RTW and organizational environments**
 - Broader fiscal context affects resource availability and social relations
 - Managerial consensus about priorities & process
 - Tracking health issues, building health and safety into jobs



Since our review...

- Hlobil et al. 2005. Effectiveness of return to work intervention for subacute low-back pain. Scand. J Work Environ Health
 - Nine randomized controlled trials, comparing a RTW intervention with usual care
 - Strong evidence was found for the effectiveness of RTW intervention on RTW rate after 6 months, and for reduction of days of absence after 12 months
 - Mixed evidence regarding its effectiveness to improve functional status and decrease pain



Since our review...

- Tveito et al. 2004. Low back pain interventions at the workplace: A systematic literature review. Occupational Medicine.
 - Controlled workplace interventions aiming to prevent or treat LBP: 24 prevention interventions, 2 multidisciplinary interventions, and 2 workplace-based interventions
 - Limited evidence of exercise intervention effect on sick leave and costs.
 - Moderate evidence for workplace-based intervention effect on sick leave and new episodes of LBP
 - Limited evidence for multidisciplinary intervention effect on level of pain
- Fayad et al. 2004. Chronicité, récurrence et reprise du travail dans la lombalgie: Facteurs communs de pronostic. Annales Réadaptation Médecine Physique.
 - 54 studies examining prognostic factors of chronicity, recurrence, and return to work for low back pain
 - Prognostic factors were general, not work-specific
 - Many factors are common to the 3 outcomes
 - Strongest evidence for work-specific factors were for dissatisfaction with work



Gaps in RTW intervention research

- Need to...
 - Improve documentation and analysis of implementation process
 - Expand to conditions other than MSK
- Need to expand outcomes...
 - Economic analyses
 - Quality-of-life of workers, quality of work life and role participation
 - Mental health of injured workers
 - Recurrences and long-term outcomes



Gaps in RTW intervention research

- Promising directions...
 - Specification of process to plan work accommodation
 - Educational interventions for case managers/supervisors
 - Facilitation of workers' interfacing with the healthcare and compensation systems
 - Engagement of top management, labour representatives in a sustainable and collaborative manner in RTW process



Where to find us...

- **Web site:** www.iwh.on.ca
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- Franche, R.L., Cullen, K., Clarke, J., Irvin, E., Sinclair, S., Frank, J. et al. (2005). Workplace-based Return-to-Work Interventions: A Systematic Review of the Quantitative Literature. *Journal of Occupational Rehabilitation*, 15(4): 607-31.
- MacEachen, E., Clarke, J., Franche, R.L., Irvin, E. (2006). The process of return to work after injury: Findings of a systematic review of qualitative studies. *Scandinavian Journal of Work, Environment, and Health*, 32(4): 257-69.

