Workplace-based Return-to-work Interventions:
A Systematic Review of the Quantitative and Qualitative Literature

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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
Objectives

- To synthesize evidence on effectiveness of workplace-based RTW interventions
- To understand injured workers and stakeholders’ RTW experience
- To provide evidence-based guidelines for methodological aspects of future research
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
Step 1: Question: What workplace-based RTW interventions are effective in what conditions for workers with pain-related conditions?

Step 2: Conduct Literature Search:

- Medicine n=1366
- Embase n=2065
- CINAHL n=891
- PsychInfo n=141
- Sociological Abstracts n=9
- ASSIA n=0
- ABI n=806
- Other n=806

Merge databases and remove duplicates n=4124

Step 3: Study Relevance.

Apply inclusion criteria to studies identified in search, N=4124

Excluded non-relevant studies, N=4059

Step 4: Quality Appraisal. N=65

- Quantitative Studies N=35
- Qualitative Studies N=15
- Systematic Reviews N=15

Excluded studies of insufficient quality. N=32

Step 5: Data Extraction. N=33

- Quantitative Studies N=11
- Qualitative Studies N=13
- Systematic Reviews N=9

Step 6: Evidence Synthesis. N=33

- Quantitative Studies N=11
- Qualitative Studies N=13
- Systematic Reviews N=9

Report Results & Conclusions
Quality Appraisal and Evidence Synthesis for Quantitative Studies

• Quality appraisal
  – Consensus-based
  – Examples of dimensions assessed: Participation rates, control for confounders, statistical power.
  – Categories of quality: Low/Medium/High/ Very High

• Evidence synthesis
  – Best Evidence Synthesis guidelines (Slavin, 1986, 1995)
    • Quality
    • Quantity
    • Consistency
Best Evidence Synthesis Guidelines

- **Strong evidence**
  - Minimum quality: Very high
  - Minimum number of studies: 3
  - Consistency: 100% of very high studies agree, and >50% of high quality studies are consistent with very high quality studies.

- **Moderate evidence**
  - Minimum quality: High
  - Minimum number of studies: 3
  - Consistency: 100% of high quality agree OR over 66% of very high quality studies agree, with over 50% of high quality studies consistent with very high quality studies.

- **Limited evidence**
  - Two studies of at least high quality converge on same findings.

- **Mixed evidence**
  - Two or three studies of at least high quality do not converge.

- **Insufficient evidence**
  - Minimum quality: High
  - Minimum number of studies: 1

- **No evidence**
  - There are no high or very high quality studies on the subject.
Outcomes

- **Work disability duration**: Time to first RTW, total duration of work disability duration, number and duration of recurrences; point-prevalence of working status at given time. (Self-report and/or administrative data)

- **Associated costs**: Healthcare costs, wage replacement costs, intervention costs

- **Quality-of-life indices**: Condition-specific functional status, general physical/mental health, symptom or illness severity, health related QOL, pain severity
Main Findings of Evidence Synthesis of Quantitative Literature

- **Strong** evidence that work accommodation offers and Health Care Provider / 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 were effective in reducing work disability duration and associated costs:
  - Early contact with worker by the workplace
  - Ergonomic work site visits – i.e. for musculoskeletal injuries, RSIs, low back pain
  - RTW coordination
Evidence Synthesis of Quantitative Literature

- Evidence regarding impact on quality of life is weaker: *Mixed* and *Insufficient*

- *Moderate* evidence that labour-management cooperation -- as opposed to fractious relations -- is associated with reduced work disability duration

- *Limited* evidence that people-oriented and safety-focused culture are associated with reduced work disability duration
Quality Appraisal and Evidence Synthesis: Qualitative Studies

• Quality appraisal
  – Based on Spencer et al. 2003, National Centre for Social Research, U.K.
  – Rigorous conduct in data collection, analysis, interpretation; credible, well-founded, plausible arguments

• Evidence synthesis
  – Meta-ethnographic approach (Campbell et al. 2004, Noblit & Hare 1988)
  – Identification and re-interpretation of findings through ‘Key Concepts’
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.

- **Conditions of goodwill and mutual confidence** are central to the success of any RTW arrangement, as they affect attributions of injury, and resources allocated to RTW.

- **Modified work**
  - Social aspects: e.g. social dislocation, resentment of co-workers, meaningfulness of work
  - Financial aspects: e.g. costs for the employer
  - Labour relations aspects: e.g. modified work can conflict with collective agreements, such as seniority clauses

Awkward fit of the injured worker to an inadequately modified work environment, or a negative social atmosphere at work, can contribute to a breakdown of the RTW process.
Evidence Synthesis for Qualitative Studies

- **Supervisors play a key role in the RTW process.**
  - Proximity to worker and day-to-day work conditions
  - Management of production changes
  - Management of co-worker issues
  - Avoidance of judgemental behaviour is key

- **Rehabilitation and occupational health professionals are key to the RTW process**
  - As a bridge between the workplace and the healthcare system
  - As way to alleviate burden on physician
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

• Inclusion of a wider set of study designs than traditional systematic reviews

• Adaptation of quality appraisal systems
Gaps in RTW intervention Research

• Need to...
  – Improve documentation and analysis of intermediary variables – implementation, feasibility, compliance
  – Measure and control for confounding variables
  – Expand to conditions other than musculo-skeletal – e.g. mental health

• Need to expand outcomes...
  – Quality-of-life of workers, quality of work life and role participation
  – Mental health of injured workers
  – Economic analyses
Gaps in RTW Intervention Research

- Promising directions...
  - Specification of work accommodation components
  - Training of case managers/supervisors
  - Facilitation of workers’ interfacing with the healthcare and compensation systems
  - Role of organized labour and worker representatives
Where to find us...

- Web site: www.iwh.on.ca
- E-mail: info@iwh.on.ca
- John Frank is now based in Edinburgh at the Scottish Collaboration for Public Health Research and Policy:
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References:
