The effect of vocational rehabilitation on return-to-work rates post stroke: a systematic review

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CRD summary
This review concluded that the existing evidence was inadequate to judge the effects of vocational rehabilitation programmes on return to work rates in survivors of stroke. High-quality randomised controlled trials were needed. Although three studies were excluded on the basis of language, it is unlikely that the authors' overall conclusions on the paucity of the evidence would change.

Authors' objectives
To evaluate the effect of vocational rehabilitation programmes on return to work rates for stroke survivors.

Searching
A range of electronic sources were searched including MEDLINE, CINAHL, The Cochrane Library and web-based clinical trials registries from the earliest available date until September 2009. Search terms were reported. The citations of included papers were checked for additional studies. Studies in languages other than English were excluded.

Study selection
Eligible studies were randomised controlled trials (RCTs), case-control and cohort studies of the effects of vocational rehabilitation programmes on return to work rates in stroke survivors of working age (18 to 65). Vocational rehabilitation was defined as a specific programme of medical, psychological, social, physical and/or occupational rehabilitation aiming to return the patient to work or availability for work. Return to work was defined as returning to a vocation including employment, unpaid work, leisure, unemployment and retirement.

Study settings included: inpatient, community, outpatient or medical centre, where reported. Patient age, gender, intervention content and duration were not reported by all studies. All trials that reported participant gender included more males than females. Mean ages, where stated, ranged from 44 to 68.9 across the study treatment groups. A variety of professionals were involved in delivering the interventions. Across the studies, definition of return to work varied.

Two reviewers independently assessed articles for inclusion in the review.

Assessment of study quality
Studies were assessed using the Downs and Black checklist which assessed both randomised and non-randomised studies. Checklist had 27 criteria and covered quality of reporting, internal validity, external validity and study power.

Two reviewers independently assessed study quality.

Data extraction
Two reviewers were involved in extracting data for the review.

Methods of synthesis
Due to differences in the definitions of return to work, a narrative synthesis was conducted.

Results of the review
Six studies were included in the review (477 participants). All were retrospective single group cohort studies. Numbers of stroke patients varied from 23 to 200 across the studies, with four having fewer than 100 patients. All studies scored 3 out of 7 on internal validity bias and 1 or 0 out of 6 for internal validity confounding. None of the studies were adequately powered to detect a potential intervention effect. Only one of the studies reported the three stages of employment rates (pre-stroke, prevocational rehabilitation and post-vocational rehabilitation).

Pre-stroke vocational status ranged from 48% to 100% (three studies). Work rates after completion of the vocational
programme ranged from 12% to 49% (all six studies).

**Authors' conclusions**
The existing evidence was inadequate to draw conclusions on the effects of vocational rehabilitation programmes on return to work rates in survivors of stroke. High-quality randomised controlled trials with standardised definitions of terms were needed.

**CRD commentary**
This review was based on defined inclusion criteria and was underpinned by a detailed search. However, studies in languages other than English were ineligible, so language bias was possible. Studies were quality assessed and results of the assessment presented. More than one reviewer was involved in the processes of study selection, data extraction and quality assessment which helped minimise bias and error. A narrative synthesis was appropriate given the diversity of the studies. Although three studies were excluded on the basis of language, it was unlikely that the authors' overall conclusions on the paucity of the evidence would change. Overall, the review appears reliable.

**Implications of the review for practice and research**

**Practice:** The authors stated that the available literature was unable to define the ideal duration, intensity, format or health professional involvement in a vocational rehabilitation programme.

**Research:** The authors stated that high-quality RCTs with long-term follow up were needed to determine successful models of rehabilitation for return to work. Secondary outcomes of quality of life, carer burden and community supports should be investigated along with programme costs. Any further studies should report all aspects of the study, consider external validity, address bias and confounding factors and include a power analysis. A consensus needed to be reached on definitions of employment, return to work and vocational rehabilitation.

**Funding**
Not stated.

**Bibliographic details**

**PubMedID**
22082705

**DOI**
10.1310/tsr1805-562

**Original Paper URL**
http://thomasland.metapress.com/content/535857581h04357x/

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Cohort Studies; Employment /statistics & numerical data; Humans; Randomized Controlled Trials as Topic /methods /statistics & numerical data; Rehabilitation, Vocational /methods; Retrospective Studies; Stroke /rehabilitation; Treatment Outcome

**AccessionNumber**
12011007531

**Date bibliographic record published**
18/04/2012
Date abstract record published
16/11/2012

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.