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## Approaches to vocational rehabilitation after traumatic brain injury: a review of the evidence

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### CRD summary

The authors concluded that there was little clear evidence to suggest the best practice approach to vocational rehabilitation in people with traumatic brain injury. Although there were some limitations in reporting of the review, the authors' conclusions appeared to reflect the limited evidence from a small number of flawed studies.

### Authors' objectives

To evaluate the effectiveness of different approaches to vocational rehabilitation for people after traumatic brain injury.

### Searching

MEDLINE, PsycINFO, CINAHL, AMED, Health and Psychosocial Instruments, EBM databases and Web of Science were searched for studies published in English between 1999 and July 2007. Search terms were reported. Four relevant specified journals were handsearched from 2000 to July 2007. Reference lists of relevant studies were screened.

### Study selection

Studies of any design were eligible if they evaluated vocational rehabilitation interventions aimed at achieving a vocational outcome for adults (18 to 65 years) after traumatic brain injury (defined as brain injury due to trauma resulting in ongoing functional impairment). Qualitative studies were included if they met criteria for quality (see Validity Assessment).

The review classified included interventions into three types: programme-based vocational rehabilitation based on New York University Medical Center Head Trauma Program model; individual placement model of supported employment; and a case co-ordinated approach. The review assessed various measures of employment, which included return to work, employment, job retention, engagement in competitive employment, full-time paid employment, earnings, hours worked, community-based employment and competitive employment without support.

One reviewer selected studies. A second reviewer oversaw the process and resolved any uncertainties about inclusion.

### Assessment of study quality

Quality was assessed using the tool developed by National Service Framework for Long Term Conditions. The tool evaluated appropriateness of the research question, clarity of design and methods, adequacy of data and generalisability and awards a maximal score of 10 points. Studies were graded as low quality (zero to three), medium quality (four to six) or high quality (seven to 10).

Qualitative studies were assessed using the framework described by Mays and Pope. This examined description of the theoretical framework and methods and reporting of analysis and adequacy of data; only studies that met these criteria were included.

It appeared that two reviewers assessed quality and resolved disagreements by discussion.

### Data extraction

The authors did not state how data were extracted for the review.

### Methods of synthesis

The studies were combined in a narrative synthesis. The level of evidence for each intervention was graded according to the National Service Framework research system: moderate evidence was supported by more than one high-quality

study; weak evidence by one high-quality or more than one medium-quality study; and insufficient evidence by fewer than two medium-quality studies.

### **Results of the review**

Twenty quantitative and three qualitative studies were included (number of participants not stated). Fourteen of the studies evaluated existing services. Five analysed data collected routinely from rehabilitation programmes or state databases.

#### Programme-based vocational rehabilitation model:

Seven studies, five of which were medium-quality studies.

There was weak evidence that people with traumatic brain injury who completed the programme had improved vocational outcomes (four studies) and were more likely to gain paid work at a competitive wage, earn more and work more hours (one study). There was weak evidence that about half remain employed one year post-placement (two studies).

#### Supported employment model:

Six studies comprised one high-quality and five medium-quality studies.

Four studies showed weak evidence that provision of supported employment enabled some previously unemployed individuals with post-traumatic brain injury to be employed within the supported employment model and that employment could be maintained for several years. There was weak evidence that provision of this rehabilitation model correlated with gaining employment that lasted at least 90 days (one study).

#### Case co-ordinated model:

Six studies comprised three high-quality, one medium-quality and two low-quality studies; the low quality study was not included in the evaluation of evidence.

There was moderate evidence that the case co-ordinated model produced higher employment than previously reported (two studies) and weak evidence that intervention within the first year post-injury was associated with more rapid placement in employment than not receiving the intervention within the first year post-injury (one study).

#### Qualitative studies:

Three studies included two judged as rigorous.

Two studies reported that return to work was viewed by patients as "having achieved normality".

### **Authors' conclusions**

There was little clear evidence to suggest what should be considered the best practice approach to vocational rehabilitation in people with traumatic brain injury.

### **CRD commentary**

The review question was clearly stated. Inclusion criteria were defined for participants. Intervention and criteria for outcomes were implied in the focus of the review. Criteria for study design were appropriately broad. A relatively wide range of sources were searched, but no attempts were made to minimise publication and language biases. Methods were used to minimise reviewer errors and bias in the assessment of validity; it was unclear whether similar steps were taken in study selection and data extraction. Study validity was assessed, but results were reported only as grades and this made it difficult for readers to judge the strength of evidence. Little information was provided about participants. Results data were not consistently reported, which made it difficult to verify findings reported in the review. A narrative synthesis was appropriate because of diversity among studies. Although there were some limitations in reporting of the review, the authors' conclusions appeared to reflect the limited evidence from a small number of

flawed studies.

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

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that further research was required to evaluate efficacy of intervention models for different types of traumatic brain injury. There was a need to develop a standardised measure of vocational rehabilitation needs, examine provision of standardised interventions that can be individualised and a need to evaluate long-term effects of vocational rehabilitation on employment.

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