Practitioner review: cognitive rehabilitation for children with acquired brain injury

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CRD summary
This review found cases of improvement, but no conclusive evidence of the efficacy of cognitive rehabilitation for children with acquired brain injury. Despite limitations in the reporting of review methodology, the conclusion is likely to accurately reflect the infancy of the research in this field. The call to address methodological difficulties is also supported.

Authors’ objectives
To review the use of cognitive rehabilitation following brain injury in children and to identify methodological limitations in the evaluation of clinical interventions in this setting.

Searching
PsycINFO (1967 to 2002), MEDLINE (1966 to 2002), CINAHL and the Cochrane Library were searched using the terms reported. Rehabilitation journals and texts, as well as citations in relevant articles, were screened.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) with concealed allocation, quasi-experimental, controlled observational studies (cohort or case control), observational studies without control groups and expert opinion were eligible for inclusion. Anecdotal reports were excluded.

Specific interventions included in the review
Studies of cognitive rehabilitation that targeted the cognitive domains of attention, memory and/or executive function were eligible for inclusion.

Participants included in the review
Studies of children or adolescents with an acquired brain injury (ABI) were eligible for inclusion. The participants in the included studies were aged from 6 to 18 years and most had sustained an ABI more than one year ago.

Outcomes assessed in the review
Explicit inclusion criteria relating to the outcomes were not reported. The majority of the included studies used intermediary measures of daily function; others used improvements in specific tasks. No studies used a validated outcome instrument.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
A systematic validity assessment was not performed. The authors discussed the methodological limitations of the studies presented.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. The rehabilitation strategy, its implementation and effects were extracted for the primary deficit treated in each study.
Methods of synthesis
How were the studies combined?
The studies were combined in a narrative, grouped by the primary deficit treated: attention, memory or executive function.

How were differences between studies investigated?
Differences between the studies were discussed in the narrative, and were apparent from the tables of results.

Results of the review
Eleven studies (n=54) were included: one quasi-experimental (n=21) and 10 observational studies without a control (n=33).

Three studies evaluated children and adolescents with primary deficit in attention, five evaluated those with primary deficit in memory, and three evaluated those with primary deficit in executive functions. Comparisons between studies were not possible because of differences in the participants, treatment variables and outcome measures. Some cases of improvement were shown, although no conclusive evidence was found for the efficacy of cognitive rehabilitation in paediatric ABI. It was not clear whether this was due to inadequate methodology or ineffective treatment packages.

Authors' conclusions
There was no conclusive evidence on the efficacy of cognitive rehabilitation for paediatric ABI. There is a need to address methodological difficulties in the evaluation of interventions in this field.

CRD commentary
The review question was not supported by well-defined inclusion criteria, which meant it was difficult to determine whether the included studies met the review objective. Several relevant sources were searched for relevant studies and unpublished studies appeared to have been included in the review. It was not reported if methods were used to minimise reviewer error and bias in the study selection or data extraction processes. Validity was not assessed, although the authors did provide a thorough summary of the methodological limitations of the included studies.

Details presented on the included studies support the authors' conclusion that there was no conclusive evidence. The authors went on to provide a useful detailed discussion of methodological issues and made suggestions for future research. In summary, despite limitations in the reporting of review methodology, the infancy of the research field would suggest that the authors' conclusions reflected the available evidence base.

Implications of the review for practice and research
Practice: The authors stated that current data suggest there is a need to consider all aspects of functioning when recommending or implementing intervention strategies.

Research: The authors stated that research priorities must be to encourage the use of standardised intervention procedures, psychometric measures and outcome evaluations, and these data should be published. The use of an intervention given at a particular age or point in time depending on an individual's cognitive profile should be considered.

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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.