A Systematic Review of Nonpharmacological Perceptual Rehabilitation After Stroke and Other Adult-Acquired Nonprogressive Brain Injury

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Stroke, and other adult-acquired brain injury, can impair a person’s ability to process the multiple sources of sensory data experienced in daily life. Perceptual impairments are many and diverse, impact on everyday activities, reduce independence, and cause distress, for example, difficulty recognizing familiar faces and everyday objects, errors judging movement and distance, and inability to find one’s way around.

Methods

This systematic review examined the quality of the evidence for rehabilitation interventions (eg, functional training, sensory stimulation, strategy training, task repetition) for people with perceptual impairments after stroke and acquired brain injury comparing active with placebo or no intervention. We excluded impairments reviewed elsewhere, that is, visual field deficits, neglect, apraxia. The primary outcome was improvement in activities of daily living beyond the end of the intervention period. We also examined other time points (eg, activities of daily living immediate effects), outcome measures (eg, impairment level), and whether any intervention was better than another.

Results

The literature searches (since updated January 2011) identified 6 single-site trials in rehabilitation settings (total 338 participants). In 4 trials, all participants had a stroke. All studies provided sensory stimulation, sometimes with another intervention. Repetition was never used and only 1 study included functional training. Only 3 trials provided any data suitable for analysis, 2 (total n=110) comparing active with placebo intervention.

No trials provided data on our primary outcome (longer-term activities of daily living). There was no evidence of effect of the interventions on any other measure of outcome, but the studies were too small to rule out clinically significant effects.

Implications for Practice and Research

There was insufficient evidence to support or refute the effectiveness of perceptual interventions. Implications for clinical practice are that although research interest has focused on sensory stimulation, at present, the possible merits of any 1 treatment approach over any other are unknown. Because we did not review whether individuals with perceptual problems benefit from general rehabilitation, they should continue to receive services in accordance with clinical guidelines. Future studies should include detailed diagnostic information on perceptual problems, provide a detailed description of the interventions, include a standard care comparison, be sufficiently powered, ensure low risk of study bias, measure longer-term functional outcomes, and include a health economic assessment. This review is ongoing and the authors would be grateful to receive information on ongoing or recently completed trials.


Disclosures

None.

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