The evidence for occupational therapy for adults with neuromuscular diseases: a systematic review


CRD summary
This review assessed the efficacy of occupational therapy in adult patients with neuromuscular diseases. Only two studies with small sample sizes met the inclusion criteria. Given the lack of empirical evidence, the authors' conclusion that there is insufficient evidence looking at this question is appropriate and likely to be reliable.

Authors' objectives
To determine the efficacy of occupational therapy for patients with neuromuscular diseases.

Searching
MEDLINE, EMBASE, CINHAL, the Cochrane Database of Systematic Reviews and the Cochrane CENTRAL Register were searched through September 2005. Search terms were reported to be available. References of selected and related articles were also checked. Only peer-reviewed articles with an abstract published in English, French, German or Dutch were included.

Study selection
Studies of randomised controlled trials (RCTs), clinical controlled trials (CCTs) and other research designs (for example, pre-post studies) of occupational therapy in adults (≥18 years) with neuromuscular disease were eligible for inclusion. Single case studies were excluded. Entrapment neuropathies, radiculopathies, thoracic outlet syndrome, diabetic neuropathies and individuals with diagnoses with impairments similar to those in neuromuscular diseases were excluded from the review. Occupational therapy interventions were required to include (alone or in combination): training of activities of daily living; skills training; advice and instruction in the use of assistive devices; provision of splints and slings; counselling on energy conservation strategies; and educating patients, families and caregivers. Studies that evaluated specific assistive devices were excluded unless the study included instruction and advice provided specifically by an occupational therapist.

Both the included interventions were of a hand exercise program with isolated and mass movements with silicone-based putty and a stretching program, delivered three times a week for 45 minutes for a duration of 12 weeks. The majority of participants were women. Mean age ranged from 52.4 years to 62.5 years. Eligible primary outcomes included measures at the level of activities, participation, quality of life or general health. Eligible secondary outcomes included measures at the level of pain, fatigue, muscle strength or fine motor skills. The primary outcomes in the included studies were: performance and satisfaction with performance of problems in daily activities (Canadian Occupational Performance Measure, COPM); score on the activities of daily living questionnaire (Activities of Daily Living (ADL)-Taxonomy); and life satisfaction (modified life satisfaction checklist).

Two reviewers individually selected studies for inclusion in the review. Any disagreements were resolved by consensus.

Assessment of study quality
Studies were assessed using a modified list recommended by van Tulder et al (1997), which considered internal validity, descriptive criteria and statistical criteria. A score for each of these areas was calculated and sufficient quality was judged separately for RCTs and CCTs and other study designs. Two reviewers independently assessed the quality of the included studies and any disagreements were resolved by discussion.

Data extraction
Mean improvement from baseline and p values were extracted. The authors did not state how data were extracted nor how many reviewers performed the data extraction.

Methods of synthesis
The studies were combined in a narrative synthesis.
Results of the review
Two pre-post design studies were included in the review (n=17). Both studies were considered to be of adequate methodological quality.

A beneficial effect of occupational therapy (hand training programs) was found in both studies. One study found an improvement in COPM scores (mean improvement 1.7, range: 0.4 to 3.8), satisfaction (mean improvement 2.7, range: 0 to 6.3), muscle strength (p<0.05) and fine motor skills in patients with myotonic dystrophy (p<0.005). No difference was found pre- and post-intervention for grip force and pinch grip (p>0.5). The other study found an improvement in ADL (p=0.01), but not in life satisfaction in patients with Wenlander distal myopathy. Muscle strength (left hand) (p=0.01), pinch grip, peak value and left hand 10-second value increased (p=0.04) and range of motion improved (no effect size reported). No significant change in grip strength from baseline to post-treatment was found.

Authors' conclusions
Training hand function may be efficacious, but there is a lack of evidence on occupational therapy in patients with neuromuscular diseases.

CRD commentary
The review question was clearly supported by inclusion and exclusion criteria. Several relevant databases were searched, but as no apparent attempt to locate unpublished material was made it is possible that some relevant studies may have been missed. Methods used to select studies and assess study quality minimised the likelihood of reviewer error and bias; it is not reported whether similar methods were used to extract data. Adequate study details and the quality of the included studies were reported and incorporated into the results. The studies were combined appropriately in a narrative synthesis. The evidence was based on two studies with small sample sizes. The authors' conclusion is appropriate and likely to be reliable given the lack of empirical evidence found.

Implications of the review for practice and research
Practice: the authors did not state any implications for practice.

Research: the authors stated that more robust studies not confined to quantitative designs are needed to include homogenous patient samples and focus on outcomes relating to activities of daily living. A number of other recommendations were made in relation to client-centered interventions based on qualitative studies not included in this review.

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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.