**Effectiveness of physiotherapy, occupational therapy, and speech pathology for people with Huntington’s disease: a systematic review (Structured abstract)**


**CRD summary**

This review assessed physiotherapy, occupational therapy and speech pathology treatments for patients with Huntington’s disease. The authors concluded that there is insufficient evidence to make strong recommendations in this area. These conclusions are likely to be reliable.

**Record status**

This record is a structured abstract written by CRD reviewers. The original has met a set of quality criteria. Since September 1996 abstracts have been sent to authors for comment. Additional factual information is incorporated into the record. Noted as (A:.....).

**Author’s objective**

The objective was to assess the effectiveness of physiotherapy, occupational therapy and speech pathology treatments in patients with Huntington’s disease (HD).

**Type of intervention**

Category

**Specific interventions included in the review**

Studies of interventions used by physiotherapists, occupational therapists and speech pathologists were eligible for inclusion. Interventions had to be used to treat impairments of movement, cognition or emotional status, or to improve performance of activities or participation in society. Interventions that were not reported to have been carried out by physiotherapists, occupational therapists or speech pathologists were excluded. The physiotherapy interventions included group exercise, relaxation, home exercise, home physiotherapy and hydrotherapy. The occupational therapy interventions included re-education in personal care and ‘Rood’ techniques. The speech pathology interventions included diet modification, use of utensils, adaptive equipment, individualised swallowing sequences, positioning and use of scripted conversations.

**Participants included in the review**

Studies with adult (aged over 18 years) patients with a confirmed diagnosis of HD (positive genetic test, or family history plus signs of chorea) were eligible for inclusion. The included studies were of patients with varying levels of disability, ranging from patients living in the community to long-term residents of psychiatric or high-level nursing care homes. The patients included those with impaired movement, gait, breathing, balance, speech, swallowing, or communication.

**Outcomes assessed in the review**

The included studies had to report qualitative or quantitative outcomes. The included physiotherapy studies assessed a wide variety of outcomes such as flexibility, range of movement, balance, coordination, control of breathing, and alertness. The included occupational therapy studies assessed the level of external assistance required with personal care activities, and subjective assessments of function. The included speech pathology studies assessed preparation of food, food transfer, swallowing, aspiration and reflux, independence level for feeding and level of communication.

**Study designs of evaluations included in the review**
The inclusion criteria were not specified in terms of the study design. The review included observational studies and nonexperimental studies. Articles based on expert opinion were also identified, but the authors stated that they were not included in the synthesis of the evidence.

**What sources were searched to identify primary studies?**

CINAHL (1982 to 2001), EMBASE (1984 to 2001), MEDLINE (1966 to 2001), the Cochrane Controlled Trials Register (November 2001), AMED (1985 to 2001) and PEDro (November 2001) were searched for studies published in the English language; details of the search strategy were presented. Book chapters or sections that were not accessible from the electronic databases were excluded. The MEDLINE, EMBASE and CINAHL searches were updated in May 2002. The reference lists in key journal articles were also checked.

**Criteria on which the validity (or quality) of studies was assessed**

Separate checklists were used to determine the validity of randomised controlled trials (RCTs), cohort, case-control studies and case series (see Other Publications of Related Interest). The authors assigned a quality score to assess selection bias, reliability and blinding of the outcome assessment, and the appropriateness of the follow-up period. The maximum possible score was 10 for RCTs, 10 for cohort studies, 9 for case-control studies and 6 for case series.

The studies were also graded using a hierarchy of study design, which was adapted from the U.S. Department of Health and Human Services grading system. The grading ranged from level I for RCTs to level IV for observational studies; level V for nonexperimental studies; and level VI for expert opinion reports. Observational studies were further graded (according to the study design) as cohort, case-control, cross-sectional, before-and-after, or case series (see Other Publications of Related Interest).

Two reviewers independently assessed validity and resolved any disagreements through discussion.

**How were the inclusion criteria applied?**

The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

**How were the data extracted from primary studies?**

Two reviewers independently extracted the data using a standardised form. Any disagreements were resolved through discussion. Data were extracted on the characteristics of the patients, interventions and results, as reported in each included study.

**Number of studies included**

Five observational studies (66 patients), four case reports (4 patients) and one study classified as expert opinion (6 patients) were included in the review.

**How were the studies combined?**

Observational and nonexperimental studies were grouped by type of therapy and combined in a narrative in order of the level of evidence and study validity. Tables summarising the impairments treated, the intervention used and the level of study design, were also presented.

**How were the differences between studies investigated?**

Differences between the studies were discussed with respect to study design and aspects of study validity.

**Results of the review**

The results for single-patient case reports are not reported in this abstract.
No experimental or quasi-experimental studies were identified. The methodological quality of the included studies was poor. The methodological problems included: small sample size; a lack of pre- and post-intervention data; a lack of statistical analysis; inadequate description of the intervention and participants; use of multi-component interventions; selection bias; and a lack of defined inclusion and exclusion criteria.

Physiotherapy: two observational studies (15 patients), one expert opinion report (6 patients) and one case report (1 patient) were identified. The studies suggested that exercise for strengthening, range of movement, mobility and balance may reduce impairment. One observational study (10 patients) reported that ‘all patients improved on 7 of the 10 functional tests’. A second observational study (5 patients) reported subjective improvement in alertness and balance, but reported no objective outcomes. The expert opinion report described the treatment of 6 patients, but did not report any objective outcomes.

Occupational therapy: one observational study (4 long term care residents of nursing homes) and two case reports (2 patients) were identified. There was insufficient evidence to draw up any recommendations for occupational therapy. The observational study (4 patients) reported marked fluctuations in performance which made data interpretation difficult. The other studies that were described in the text contained one patient each.

Speech pathology treatment: two observational studies (47 patients) and one case report (1 patient) were identified. There was some evidence to suggest that speech pathology interventions improve independent feeding. There was limited evidence to suggest that interventions can improve dysphagia. One observational study (12 people with dysarthria and impaired swallow and cough, of which 11 received speech pathology treatment) reported that the intervention improved the preparation, transfer and swallowing phase of eating and reduced aspiration and reflux. The second observational study (35 patients) found that the intervention improved the independent eating ability and reduced fast eating for 29 out of 30 people with hyperkinetic movement. It also found that 3 of the 5 patients with rigidity used adaptive equipment to improve their dependence for feeding.

**Was any cost information reported?**

No.

**Author's conclusions**

There was insufficient evidence to make strong recommendations about the place of physiotherapy, occupational therapy and speech pathology interventions in the treatment of patients with HD. There was sparse evidence to suggest that exercise may be helpful in treating specific impairments in patients with mild disease. Preliminary evidence suggests that speech pathology may help reduce the risk of aspiration.

**CRD commentary**

The review question was clear in terms of the intervention and participants. The inclusion criteria were not defined in terms of the study design or outcomes. Several relevant sources were searched and the search terms were stated. No attempts were made to limit language bias. The methods used to select the studies were not described; hence, any efforts made to reduce errors and bias cannot be judged. Two reviewers independently assessed validity and extracted the data, which reduces the potential for bias and errors. The authors described the individual studies in the text of the review, and the narrative synthesis was appropriate given the small number of observational studies identified. Despite stating that studies classified as expert opinion would not be included in the data synthesis, the synthesis referred to one report of expert opinion, thus not adhering to the stated strategy. The evidence presented supports the authors’ conclusion that there was insufficient evidence to make strong recommendations about the treatments. However, given the small number of uncontrolled, methodologically flawed studies and the inclusion of expert opinion, the evidence is insufficient to make any comment on the efficacy of physiotherapy or speech pathology treatments.

**What are the implications of the review?**

Practice: The authors did not state any implications for practice.
Research: The authors stated that controlled trials in people with HD are required. They stated that research should assess impairments and limitations of activity using the Unified Huntington’s Disease Rating Scale. In addition, it should determine which factors are associated with response to treatment and evaluate environmental enrichment interventions.

Other publications of related interest

NHS Centre for Reviews and Dissemination. Undertaking systematic reviews of research on effectiveness. CRD’s guidance for those carrying out or commissioning reviews. York: University of York, NHS Centre for Reviews and Dissemination; 2001. Report No.: CRD report 4 (2nd ed.).

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Language of publication

English

Copyright comments

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CRD database number

DARE-20033525

Subject index terms

Subject indexing assigned by NLM: Medical Subject Headings (MeSH): Huntington Disease [rehabilitation] [therapy]; Occupational Therapy; Physical Therapy Modalities; Speech-Language Pathology

CRD database number: DARE20033525