Evidence-based practice recommendations for working with individuals with dementia: Montessori-based interventions

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CRD summary
This review assessed the efficacy of Montessori-based interventions in individuals with dementia. The authors concluded that such interventions may be beneficial, but further evidence is required to determine their efficacy. Poor reporting of the inclusion criteria means that the reliability of these appropriately cautious conclusions cannot be determined.

Authors' objectives
To assess the evidence for the use of Montessori-based interventions for people with dementia and make evidence-based recommendations.

Searching
MEDLINE (from 1966), CINAHL (from 1982), HealthSTAR (from 1980), PsycINFO (from 1967), the Cochrane Database of Systematic Reviews, Health Reference Center (from 1980), ERIC (from 1966), the Social Sciences Citation Index (from 1966) and PubMed were searched to August 2002; the search terms were reported. Handsearches of textbooks, journals unavailable electronically, review articles, book chapters and a Montessori manual were also conducted.

Study selection
Studies of the use of Montessori-based interventions with individuals with dementia were eligible for inclusion. The interventions used included memory bingo, question asking, reading and simple sensory activities. The majority of individuals in the included studies were female and the severity of dementia ranged from mild to severe. It is not entirely clear whether studies in people with dementia not related to Alzheimer's disease (AD) were eligible for inclusion: all included studies were in people with diagnoses of probable or possible AD established through a range of different criteria and/or tests. Inclusion criteria for the study design and outcomes were not stated. The included studies were non-randomised controlled trials, uncontrolled studies and studies of a within-subjects design. A range of outcome scales were used. These included dementia scales such as the Mini Mental State Exam (MMSE), Dementia Rating Scale and the Wechsler Memory and Intelligence Scales; and assessments of functioning such as the Direct Assessment of Functional Status (DAFS), levels of positive and negative engagement; and the affective states of pleasure, anger, sadness and fear.

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

Assessment of study quality
It appears that the use of control groups, randomisation, and the presence or treatment of missing data were evaluated in order to assess internal validity. The authors stated that two reviewers independently extracted data on factors relating to internal, external and content validity.

Data extraction
A summary of overall effects was extracted. Two reviewers independently carried out the data extraction.

Methods of synthesis
The studies were combined in a narrative. Differences between the studies in terms of types of participant characteristics, nature of the interventions, and outcomes assessed and observed were discussed in the text.

Results of the review
Five studies (n = approximately 74) were included in the review.
Study quality was variable: none of the studies was randomised, three studies did not employ control groups, and three did not document withdrawals and drop-outs.

One controlled study reported that the group involved in Montessori interventions displayed more constructive engagement and more passive engagement than the control group given alternative interventions. A second controlled study found lower levels of disengagement during Montessori activities. Three uncontrolled studies variously found positive outcomes. One reported improvements in change scores on 22 cognitive measures and the level of disengagement reported during activities. A second found that the Montessori group did not differ in levels of engagement during regular activities, but did display more constructive engagement during the Montessori activities; higher levels of pleasure and lower levels of anxiety were observed at some time points but not others. A third study found that social interaction improved with the intervention.

Authors' conclusions
Overall, study results suggested that Montessori activities improved performance on cognitive measures, engagement levels, affective states and social interaction more than regular or routine activities. However, more information is required before strong conclusions can be drawn as to the relative efficacy of Montessori-based interventions.

CRD commentary
The review question was clear, but the inclusion criteria were in most cases not explicitly stated. The search was reasonably extensive, thereby reducing the likelihood that some relevant studies were not included; however, it is not clear whether unpublished studies were sought. The authors reported using methods designed to reduce bias and error for most aspects of the review process, although it is not clear whether this was the case when selecting the studies. The assessment of validity included some important aspects of internal validity. The decision to adopt a narrative synthesis was clearly appropriate in view of the clinical and methodological heterogeneity of the included studies. The authors' appropriately cautious conclusions are based on the results of the review, although poor reporting of the inclusion criteria means it is difficult to ascertain their reliability.

Implications of the review for practice and research
Practice: The authors made recommendations for practice. In particular, that Montessori-based interventions should be considered for individuals with mild to moderate dementia resulting in episodic memory impairment, but who retain some capacity for motor learning, verbal communication and socialising, who are without history of physical aggression, and who are able to attend and participate in activities which require functional visual and auditory capacities. They also stated that interventions should include prior assessments to determine an individuals' suitability for the programme; should focus on tasks relevant to the individual's daily life; and that practice trials with repetition should be provided.

Research: The authors made recommendations for further research. In particular, that studies of Montessori-based interventions should determine the session frequency and length that is clinically effective and practically possible; that the duration of positive effects after treatment cessation be assessed; that group versus individual interventions should be compared; that interventions with and without an inter-generational component should be evaluated; that the relative benefit of interventions on different outcome types should be assessed; that the benefits of interventions for individuals with different severities and types of dementia, and individuals from different ethnic backgrounds, should be assessed.

Funding
Not stated.

Bibliographic details

Indexing Status
Subject indexing assigned by CRD
MeSH
Aged; Aged, 80 and over; Alzheimer Disease /rehabilitation; Attention; Communication; Dementia /psychology /rehabilitation; Learning; Memory; Mental Processes; Models, Educational; Motivation; Occupational Therapy /psychology; Patient Education as Topic /organization & administration; Patient Participation /psychology; Quality of Life /psychology; Teaching /methods

AccessionNumber
12006005227

Date bibliographic record published
20/07/2007

Date abstract record published
03/11/2008

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.