



Cochrane
Library

Cochrane Database of Systematic Reviews

Music-based therapeutic interventions for people with dementia (Review)

van der Steen JT, Smaling HJA, van der Wouden JC, Bruinsma MS, Scholten RJPM, Vink AC

van der Steen JT, Smaling HJA, van der Wouden JC, Bruinsma MS, Scholten RJPM, Vink AC.
Music-based therapeutic interventions for people with dementia.
Cochrane Database of Systematic Reviews 2018, Issue 7. Art. No.: CD003477.
DOI: [10.1002/14651858.CD003477.pub4](https://doi.org/10.1002/14651858.CD003477.pub4).

www.cochranelibrary.com

[Intervention Review]

Music-based therapeutic interventions for people with dementia

Jenny T van der Steen¹, Hanneke JA Smaling², Johannes C van der Wouden³, Manon S Bruinsma^{4,5}, Rob JPM Scholten⁶, Annemiek C Vink⁷

¹Department of Public Health and Primary Care, Leiden University Medical Center, Leiden, Netherlands. ²Department of Public and Occupational Health, Amsterdam Public Health Research Institute, VU University Medical Center, Amsterdam, Netherlands. ³Department of General Practice and Elderly Care Medicine, Amsterdam Public Health Research Institute, VU University Medical Center, Amsterdam, Netherlands. ⁴Muzis, Praktijk voor Muziektherapie, Amersfoort, Netherlands. ⁵Music and Memory, Mineola, NY, USA. ⁶Cochrane Netherlands, Julius Center for Health Sciences and Primary Care / University Medical Center Utrecht, Utrecht, Netherlands. ⁷Music Therapy Department, ArtEZ School of Music, Enschede, Netherlands

Contact: Jenny T van der Steen, Department of Public Health and Primary Care, Leiden University Medical Center, Hippocratespad 21, Gebouw 3, PO Box 9600, Leiden, 2300RC, Netherlands. jtvandersteen@lumc.nl, j.vandersteen@vumc.nl.

Editorial group: Cochrane Dementia and Cognitive Improvement Group.

Publication status and date: New search for studies and content updated (conclusions changed), published in Issue 7, 2018.

Citation: van der Steen JT, Smaling HJA, van der Wouden JC, Bruinsma MS, Scholten RJPM, Vink AC. Music-based therapeutic interventions for people with dementia. *Cochrane Database of Systematic Reviews* 2018, Issue 7. Art. No.: CD003477. DOI: [10.1002/14651858.CD003477.pub4](https://doi.org/10.1002/14651858.CD003477.pub4).

Copyright © 2018 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

ABSTRACT

Background

Dementia is a clinical syndrome with a number of different causes which is characterised by deterioration in cognitive, behavioural, social and emotional functions. Pharmacological interventions are available but have limited effect to treat many of the syndrome's features. Less research has been directed towards non-pharmacological treatments. In this review, we examined the evidence for effects of music-based interventions.

Objectives

To assess the effects of music-based therapeutic interventions for people with dementia on emotional well-being including quality of life, mood disturbance or negative affect, behavioural problems, social behaviour and cognition at the end of therapy and four or more weeks after the end of treatment.

Search methods

We searched ALOIS, the Specialized Register of the Cochrane Dementia and Cognitive Improvement Group (CDCIG) on 19 June 2017 using the terms: music therapy, music, singing, sing, auditory stimulation. Additional searches were carried out on 19 June 2017 in the major healthcare databases MEDLINE, Embase, PsycINFO, CINAHL and LILACS; and in trial registers and grey literature sources.

Selection criteria

We included randomised controlled trials of music-based therapeutic interventions (at least five sessions) for people with dementia that measured any of our outcomes of interest. Control groups either received usual care or other activities with or without music.

Data collection and analysis

Two review authors worked independently to screen the retrieved studies against the inclusion criteria and then to extract data and assess methodological quality of the included studies. If necessary, we contacted trial authors to ask for additional data, including relevant subscales, or for other missing information. We pooled data using random-effects models.

Main results

We included 22 studies with 1097 randomised participants. Twenty-one studies with 890 participants contributed data to meta-analyses. Participants in the studies had dementia of varying degrees of severity, and all were resident in institutions. Seven studies delivered an individual music intervention; the other studies delivered the intervention to groups of participants. Most interventions involved both active and receptive musical elements. The methodological quality of the studies varied. All were at high risk of performance bias and some were at high risk of detection or other bias.

At the end of treatment, we found low-quality evidence that the interventions may improve emotional well-being and quality of life (standardised mean difference (SMD) 0.32, 95% confidence interval (CI) 0.02 to 0.62; 9 studies, 348 participants) and reduce anxiety (SMD -0.43, 95% CI -0.72 to -0.14; 13 studies, 478 participants). We found low-quality evidence that music-based therapeutic interventions may have little or no effect on cognition (SMD 0.15, 95% CI -0.06 to 0.36; 7 studies, 350 participants). There was moderate-quality evidence that the interventions reduce depressive symptoms (SMD -0.27, 95% CI -0.45 to -0.09; 11 studies, 503 participants) and overall behaviour problems (SMD -0.23, 95% CI -0.46 to -0.01; 10 studies, 442 participants), but do not decrease agitation or aggression (SMD -0.07, 95% CI -0.24 to 0.10; 14 studies, 626 participants). The quality of the evidence on social behaviour was very low, so effects were very uncertain.

The evidence for long-term outcomes measured four or more weeks after the end of treatment was of very low quality for anxiety and social behaviour, and for the other outcomes, it was of low quality for little or no effect (with small SMDs, between 0.03 and 0.34).

Authors' conclusions

Providing people with dementia who are in institutional care with at least five sessions of a music-based therapeutic intervention probably reduces depressive symptoms and improves overall behavioural problems at the end of treatment. It may also improve emotional well-being and quality of life and reduce anxiety, but may have little or no effect on agitation or aggression or on cognition. We are uncertain about effects on social behaviour and about long-term effects. Future studies should examine the duration of effects in relation to the overall duration of treatment and the number of sessions.

PLAIN LANGUAGE SUMMARY

Music-based therapeutic interventions for people with dementia

Background

People with dementia gradually develop difficulties with memory, thinking, language and daily activities. Dementia is often associated with emotional and behavioural problems and may decrease a person's quality of life. In the later stages of dementia it may be difficult for people to communicate with words, but even when they can no longer speak they may still be able to hum or play along with music. Therapy involving music may therefore be especially suitable for people with dementia. Music therapists are specially qualified to work with individuals or groups of people, using music to try to help meet their physical, psychological and social needs. Other professionals may also be trained to provide similar treatments.

Purpose of this review

We wanted to see if we could find evidence that treatments based on music improve the emotional well-being and quality of life of people with dementia. We were also interested in evidence about effects on emotional, behavioural, social or cognitive (e.g. thinking and remembering) problems in people with dementia.

What we did

We searched for clinical trials that measured these effects and in which people with dementia were randomly allocated to a music-based treatment or to a comparison group. The comparison groups might have had no special treatment, or might have been offered a different activity. We required at least five sessions of treatment because we thought fewer sessions than five were unlikely to have much effect. We combined results of trials to estimate the effect of the treatment as accurately as possible. The evidence is current to 19 June 2017.

What we found

We found 22 trials to include in the review and we were able to combine results for at least some outcomes from 890 people. All of the people in the trials stayed in nursing homes or hospitals. Some trials compared music-based treatments with usual care, and some compared them with other activities, such as cooking or painting. The quality of the trials and how well they were reported varied, and this affected our confidence in the results. First, we looked at outcomes immediately after a course of therapy ended. From our results, we could be moderately confident that music-based treatments improve symptoms of depression and overall behavioural problems, but not specifically agitated or aggressive behaviour. They may also improve anxiety and emotional well-being including quality of life, although we were less confident about these results. They may have little or no effect on cognition. We had very little confidence in our results on social interaction. Some studies also looked to see whether there were any lasting effects four weeks or more after treatment ended. However, there were few data and we were uncertain or very uncertain about the results. Further trials are likely to have a significant impact on what we know about the effects of music-based treatments for people with dementia, so continuing research is important.

Music-based therapeutic interventions for people with dementia (Review)