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[Intervention Review]

Music for stress and anxiety reduction in coronary heart disease patients

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ABSTRACT

Background

Individuals with coronary heart disease (CHD) often suffer from severe distress due to diagnosis, hospitalization, surgical procedures, uncertainty of outcome, fear of dying, doubts about progress in recovery, helplessness and loss of control. Such adverse effects put the cardiac patient at greater risk for complications, including sudden cardiac death. It is therefore of crucial importance that the care of people with CHD focuses on psychological as well as physiological needs.

Music interventions have been used to reduce anxiety and distress and improve physiological functioning in medical patients; however its efficacy for people with CHD needs to be evaluated.

Objectives

To update the previously published review that examined the effects of music interventions with standard care versus standard care alone on psychological and physiological responses in persons with CHD.

Search methods

We searched the Cochrane Central Register of Controlled Trials (CENTRAL) on *The Cochrane Library* (2012, Issue 10), MEDLINE (OvidSP, 1950 to October week 4 2012), EMBASE (OvidSP, 1974 to October week 5 2012), CINAHL (EBSCOhost, 1982 to 9 November 2012), PsycINFO (OvidSP, 1806 to October week 5 2012), LILACS (Virtual Health Library, 1982 to 15 November 2012), Social Science Citation Index (ISI, 1974 to 9 November 2012), a number of other databases, and clinical trial registers. We also conducted handsearching of journals and reference lists. We applied no language restrictions.

Selection criteria

We included all randomized controlled trials and quasi-randomized trials that compared music interventions and standard care with standard care alone for persons with confirmed CHD.

Data collection and analysis

Two review authors independently extracted data and assessed methodological quality, seeking additional information from the trial researchers when necessary. We present results using weighted mean differences for outcomes measured by the same scale, and standardized mean differences for outcomes measured by different scales. We used post-intervention scores. In cases of significant baseline difference, we used change scores (changes from baseline).



Main results

We identified four new trials for this update. In total, the evidence for this review rests on 26 trials (1369 participants). Listening to music was the main intervention used, and 23 of the studies did not include a trained music therapist.

Results indicate that music interventions have a small beneficial effect on psychological distress in people with CHD and this effect is consistent across studies (MD = -1.26, 95% CI -2.30 to -0.22, P = 0.02, I^2 = 0%). Listening to music has a moderate effect on anxiety in people with CHD; however results were inconsistent across studies (SMD = -0.70, 95% CI -1.17 to -0.22, P = 0.004, I^2 = 77%). Studies that used music interventions in people with myocardial infarction found more consistent anxiety-reducing effects of music, with an average anxiety reduction of 5.87 units on a 20 to 80 point score range (95% CI -7.99 to -3.75, P < 0.00001, I^2 = 53%). Furthermore, studies that used patient-selected music resulted in greater anxiety-reducing effects that were consistent across studies (SMD = -0.89, 95% CI -1.42 to -0.36, P = 0.001, I^2 = 48%). Findings indicate that listening to music reduces heart rate (MD = -3.40, 95% CI -6.12 to -0.69, P = 0.01), respiratory rate (MD = -2.50, 95% CI -3.61 to -1.39, P < 0.00001) and systolic blood pressure (MD = -5.52 mmHg, 95% CI -7.43 to -3.60, P < 0.00001). Studies that included two or more music sessions led to a small and consistent pain-reducing effect (SMD = -0.27, 95% CI -0.55 to -0.00, P = 0.05). The results also suggest that listening to music may improve patients' quality of sleep following a cardiac procedure or surgery (SMD = 0.91, 95% CI 0.03 to 1.79, P = 0.04).

We found no strong evidence for heart rate variability and depression. Only one study considered hormone levels and quality of life as an outcome variable. A small number of studies pointed to a possible beneficial effect of music on opioid intake after cardiac procedures or surgery, but more research is needed to strengthen this evidence.

Authors' conclusions

This systematic review indicates that listening to music may have a beneficial effect on anxiety in persons with CHD, especially those with a myocardial infarction. Anxiety-reducing effects appear to be greatest when people are given a choice of which music to listen to.

Furthermore, listening to music may have a beneficial effect on systolic blood pressure, heart rate, respiratory rate, quality of sleep and pain in persons with CHD. However, the clinical significance of these findings is unclear. Since many of the studies are at high risk of bias, these findings need to be interpreted with caution. More research is needed into the effects of music interventions offered by a trained music therapist.

PLAIN LANGUAGE SUMMARY

Music to reduce stress and anxiety for people with coronary heart disease

Individuals with coronary heart disease often suffer from severe distress, putting them at greater risk for complications, including sudden cardiac death. It is therefore important that the care of people with coronary heart disease focuses on psychological as well as physiological needs. Music interventions have been used for many years to reduce anxiety and distress and improve physiological responses such as heart rate and respiratory rate in medical patients.

This review is an update of a previous Cochrane review from 2009 which suggested that music interventions may have a beneficial effect on anxiety and physiological responses in people with coronary heart disease but the quality of the evidence was not strong and the clinical significance unclear.

For this review, we searched for additional trials on the effect of music interventions on stress and anxiety in people with coronary heart disease. We searched for studies published up until November 2012 as well as ongoing studies until November 2012. We considered all studies in which any form of participation in music (e.g. listening to music, singing, playing music) was compared with any form of standard treatment and included persons with confirmed coronary heart disease. We identified four new trials for this update.

This review includes 26 trials with a total of 1369 participants. The trials were small in size. The findings suggest that listening to music may have a beneficial effect on systolic blood pressure and heart rate in people with coronary heart disease. Listening to music also appears to be effective in reducing anxiety in people with myocardial infarction, especially when they are given a choice of which music to listen to. Listening to music may also reduce pain and respiratory rate. However the size of the effects on pain and respiratory rate is small. Therefore, its clinical importance is unclear. Finally, listening to music appears to improve patients' quality of sleep following a cardiac procedure or surgery. We found no evidence of effect for depression or heart rate variability, and inconsistent results for mood. No adverse effects of music interventions were reported. The majority of the studies examined the effects of listening to pre-recorded music. More research is needed on the effects of music interventions offered by a trained music therapist. Overall, the quality of the evidence is not strong thus the results should be interpreted with caution.

We did not identify any conflicts of interests in the included studies.