Music as a nursing intervention for postoperative pain: a systematic review

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CRD summary
This review concluded that music could be used as an adjuvant for the relief of postoperative pain. However, given the lack of reporting regarding the review process and validity assessment, the potential for missed studies and some small sample sizes, this conclusion may not be reliable.

Authors' objectives
To investigate the effect of music on postoperative pain.

Searching
PubMed, CINAHL, Blackwell Synergy and Science Direct were searched between 1998 and 2007 for studies published in English. Search terms were reported.

Study selection
Quantitative, randomised controlled trials (RCTs) or quasi-experimental studies of adults that included music interventions (with or without other non-pharmacological methods) in patients who had undergone surgery were eligible for inclusion. Eligible studies were required to use postoperative pain as an outcome measure. Studies that used sounds instead of music were excluded.

The included studies were performed in the USA, Sweden, Japan, Hong Kong, China and Taiwan. Participants ranged from 15 to 86 years old (where stated) and were scheduled for different surgical procedures that varied in complexity. The interventions used in addition to music included therapeutic suggestions, guided imagery, scheduled rest, jaw relaxation and decreased noise levels. Most of the control groups received usual care or listened to a blank tape or compact disc. In most of the studies participants could choose music from tapes or compact discs made by the investigators; in other studies the research team selected the music, participants brought their own music, or (in one study) a live harpist played their own selection of music. The timing of the intervention and the time at which assessments were made varied between studies. The instruments used to assess pain were: the visual analogue scale (VAS), the numeric rating scale (NRS), the verbal rating scale (VRS), the Wong-Baker Faces Scale, and the graphic numeric pain intensity scale. Analgesic consumption was also measured in some studies.

One reviewer performed selected studies for inclusion.

Assessment of study quality
Methodological quality was assessed in terms of research methods, participant characteristics, inclusion/exclusion criteria, randomisation, statistical analyses, ethics, reliability, validity and generalisability. Six studies were excluded after appraisal (no further details reported).

The authors did not state how many reviewers performed the validity assessment.

Data extraction
Data for the outcome measures were extracted.

The authors did not state how many reviewers performed the data extraction.

Methods of synthesis
Studies were presented in a narrative synthesis by outcome (postoperative pain and consumption of analgesics).

Results of the review
Eighteen studies were included in the review (n=1,604 patients; range 17 to 500). Fourteen studies were RCTs (n=1,372 patients) and four studies were quasi-experimental (n=232 patients). The authors stated that the methodological quality of the included studies was high.

Postoperative pain was significantly reduced in 12 RCTs and three quasi-experimental studies. Three RCTs found no significant difference between the intervention and control groups.

Analgesic consumption was significantly less in the intervention group (with music) than in the control group in four RCTs and one quasi-experimental study. There was no significant difference between the groups in five RCTs.

**Authors’ conclusions**
Music could be used as an adjuvant for the relief of postoperative pain.

**CRD commentary**
The research question was defined in terms of participants, intervention, outcome and study design. Several databases were searched but inclusion was restricted to published English language studies, which increased the risk of language and publication bias. Studies were selected by only one reviewer, so error and bias were possible. Validity assessment and data extraction were not described, so it was not known whether steps were taken to reduce the risk of reviewer bias and error.

Although study quality was assessed, few details were given regarding the items assessed; the results of the assessment were not reported. Also, it was not clear whether the results of the quality assessment were used in the analysis. A narrative synthesis appeared appropriate given the differences in music intervention, participants and outcome measures. Sample sizes were also generally small.

Given the lack of reporting regarding the review process and validity assessment, the potential for missed studies and some small sample sizes, the authors’ conclusion may not be reliable.

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

**Research:** The authors stated that additional quantitative studies that examine the effect of music on postoperative pain in larger populations (perhaps in multicentre studies) would be of interest.

**Funding**
Not stated.

**Bibliographic details**

**PubMedID**
19962104

**DOI**
10.1016/j.jopan.2009.10.013

**Original Paper URL**
http://dx.doi.org/10.1016/j.jopan.2009.10.013

**Indexing Status**
Subject indexing assigned by NLM
MeSH
Adult; Humans; Music Therapy; Pain, Postoperative /prevention & control

AccessionNumber
12010001329

Date bibliographic record published
19/05/2010

Date abstract record published
19/01/2011

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.