
Music in the endoscopy suite: a meta-analysis of randomized controlled studies

Rudin D, Kiss A, Wetz R V, Sottile V M

CRD summary

This review concluded that music therapy was an effective tool for stress relief and analgesia in patients undergoing gastrointestinal endoscopic procedures. However, given the methodological limitations in the review and the diverse ways in which music can be delivered, the results should be treated with some caution.

Authors' objectives

To assess the effects of music therapy on patients undergoing gastrointestinal endoscopic procedures.

Searching

The databases PubMed (1966 to April 2006) and the Cochrane Library (Issue 4, 2006) were searched for studies published in English. Search terms were reported. References of previous publications were also scanned.

Study selection

Randomised controlled trials (RCTs) that examined the effects of music therapy on patients undergoing gastrointestinal endoscopic procedures were eligible for inclusion.

In included RCTs, music therapy consisted of exposure to music selected by the researchers or the patients, delivered with or without earphones or headphones, before and/or during the procedure. Outcomes related to anxiety as measured by the state-trait anxiety inventory (STAI) in trials where sedatives and analgesics were not used. Where pharmacotherapy was used, reduction in sedation and analgesia requirements and procedure duration were assessed.

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

Assessment of study quality

The authors did not state that they assessed validity.

Data extraction

Outcomes of efficacy in terms of anxiety levels, sedation and analgesia requirements and procedure duration were extracted or calculated for the included studies.

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

Methods of synthesis

Included studies were divided into two groups. In group A, where pharmacotherapy was not used, anxiety levels were used as a measure of efficacy. In group B, where pharmacotherapy was used, sedation and analgesia requirements were assessed. A series of meta-analyses were performed assessing the effects of the music intervention on anxiety levels in group A patients and on sedation and analgesia requirements and procedure times in group B patients. Significance level for group B analyses was adjusted to account for multiple testing, with p values of less than 0.017 taken to be significant. Pooled standardised mean differences between intervention and control groups were calculated, with 95% confidence intervals, for the outcomes of interest.

Results of the review

Six randomised controlled trials (RCTs) were included in the review (n=641 participants).

Endoscopy without pharmacotherapy - group A (380 patients, three RCTs): There was a statistically significant reduction in anxiety levels, as measured by the state-trait anxiety inventory, in patients receiving music therapy compared with the control group (standardised mean difference -0.29, 95% confidence interval (CI): -0.5 to -0.09).

Endoscopy with pharmacotherapy - group B (261 patients, three RCTs): The sedation requirements for the music intervention were not statistically significantly different from those of the control group. Analgesia requirements were statistically significantly reduced for patients receiving the music intervention compared with the control group (standardised mean difference -0.77, 95% CI: -1.2 to -0.31). Procedure duration was statistically significantly reduced for patients with the music intervention compared with the control group (standardised mean difference -0.38, 95% CI: -0.63 to -0.14).

Authors' conclusions

Music therapy was an effective tool for stress relief and analgesia in patients undergoing gastrointestinal endoscopic procedures.

CRD commentary

This review included a defined population, outcomes and study design, and a broadly defined intervention. Searching used a variety of sources but was restricted to published English language studies. This leaves open the possibility of publication bias (where studies with a positive outcome are more likely to be published) and language bias. Methods of study selection were not documented, so it is unclear what measures were taken to avoid bias and errors in this process. Study validity was not assessed. Methods of data extraction were outlined briefly and analysis methods were described. It could be argued that pooling the results was inappropriate given the diversity of comparator drugs, variations in music interventions and lack of uniformity between procedures. The authors' conclusions appear to follow from the results presented. However, given the methodological limitations outlined and the diverse ways in which music can be delivered, results should be treated with some caution.

Implications of the review for practice and research

Practice: The authors stated that music therapy should be used in gastrointestinal endoscopic procedures, with patient selected music delivered through headphones being the ideal intervention.

Research: The authors did not state any implications for further research.

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