

TITLE:

Music interventions in hypertension treatment: A systematic review and meta-analysis.

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POSTER DESCRIPTION

Background: Hypertension has been documented as a major risk factor for cardiovascular morbidity and mortality. When life-style adjustment approaches fail in reducing blood pressure, the main treatment modality in hypertension is pharmacological treatment. Due to adverse effects, treatment resistance and high costs there is growing interest in non-pharmacological complementary therapies such as music interventions. Music interventions can be offered as a cost-effective treatment. Several studies have been performed to examine the possible effects of music on hypertension. This meta-analysis aims to provide an overview of reported evidence on the efficacy of music interventions, applied as live or recorded music, in the treatment of hypertension.

Methods: According to the PRISMA guidelines, a systematic literature search was conducted for publications on the effect of multiple music interventions on blood pressure in adult hypertensive subjects published between January 1990-June 2014. Randomized controlled trials with a follow-up duration ≥ 28 days were included. Blood pressure measures were pooled using inverse variance weighting in a random effects model. When

the number of studies was not sufficiently large to reliably estimate the tau-squared statistic (<4 studies), a fixed-effect model was used as well.

Results: Of the 1689 abstracts reviewed, 10 randomized controlled trials were included. Random-effects pooling of the music intervention groups showed a trend toward a decrease in mean systolic blood pressure (SBP) from 144 mmHg(95%CI:137-152) to 134 mmHg(95%CI:124-144), and in mean diastolic blood pressure (DBP) from 84 mmHg(95%CI:78-89) to 78 mmHg(95%CI:73-84). Fixed-effect analysis of a subgroup of 3 trials with valid control groups showed a significant decrease in pooled mean SBP and DBP in both intervention and control groups.

Conclusions: This systematic review and meta-analysis revealed a trend towards a decrease in blood pressure in hypertensive patients who received music interventions, but failed to establish a cause-effect relationship between music interventions and blood pressure reduction. Considering the potential value of this safe, low-cost intervention, well-designed, high quality and sufficiently powered randomized studies following the CONSORT statement for nonpharmacological trials with clearly-defined interventions and controls assessing the efficacy of music interventions in the treatment of hypertension are warranted. The influence of different forms of music interventions, analyzing both live and recorded music therapy, and effects of factors such as genre and patient-preference, should be investigated. This research could explore the ability of music interventions in lowering blood pressure in a large population, examine the permanence of the reduction in blood pressure and elucidate which patients could benefit most.

50-WORD ABSTRACT

This meta-analysis aims to provide an overview of reported evidence considering efficacy of music interventions in the treatment of hypertension. Results show a trend toward a decrease in blood pressure. Future research is required to establish a cause-effect relationship between music interventions and blood pressure reduction in hypertensive patients.

50-WORD BIOGRAPHY OF PRESENTER

Drs. AYR Kühlmann, MD, is working in the Erasmus Medical Center, Rotterdam, The Netherlands. She is a PhD-student doing research in the possible applications of music and music medicine in healthcare facilities. Currently, she is investigating the effects of music on anxiety and pain in very young infants undergoing surgery.

KEYWORDS: Hypertension, Music Intervention, Meta-Analysis, Systemic Review, Global health care delivery.

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