

Music in Pregnancy to Improve Maternal Stress Resilience in Favor of the Offspring: A Systematic Review

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Abstract

Abstract Background: Maternal mental health influences the metabolism and growth of fetal brain structures affecting their skills up to adulthood. **Objective:** Main objective is whether music interventions improve modifiable maternal health outcomes. **Search Strategy:** Up to July 2023, randomized controlled trials (RCTs) investigating music during pregnancy were identified using MEDLINE, CENTRAL, WEB OF SCIENCE. **Selection Criteria:** Using COVIDENCE reviewers screened for RCTs with >3 interventions applying the Perceived Stress Scale (PSS), State-Trait-Anxiety Inventory (STAI), Edinburgh Postnatal Depression Scale (EPDS), or blood pressure (BP) as outcome measures. **Data Collection and Analysis:** The revised Cochrane risk-of-bias tool (RoB2) and the reversed Cohen's d were applied to investigate the impact of target groups, frequency, type and selection of music programs. The review was registered via PROSPERO CRD42022299950. **Main Results:** From 251 records, 14 RCTs (16 intervention arms) and 2375 pregnancies were included. Music interventions varied from 3 to 84 active or passive music sessions per pregnancy or 10 to 60 minutes per day and significantly decreased PSS in 2/4, STAI in 8/9, EPDS in 3/4 and BP in 3/4 RCTs. RoB2 was high in 5/14, or "with concerns" in 9/14 studies. Stratifying the Cohen's d in 14 interventions arms suggested a big effect in 234/469 mothers on BP, and in 244/489 mothers on maternal anxiety. **Conclusion:** The findings show the detailed potential of music interventions on maternal BP, stress resilience or anxiety complementing our research on complex music interventions throughout pregnancy in times of pandemics, violent conflicts, or natural catastrophes. **Funding:** Clara Angela Foundation. **Key words:** Music in pregnancy, systematic review, maternal stress, anxiety, and depression.

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