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The role of oxytocin in music interventions: a systematic review

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ADMINISTRATIVE INFORMATION

Support - The research received no external funding.

Review Stage at time of this submission - Risk of bias assessment.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 October 2023 and was last updated on 27 October 2023.

INTRODUCTION

Review question / Objective The aim of this review was to identify and synthesize the results of existing primary studies on the relationship between oxytocin and music.

Rationale There is a growing body of literature regarding music and the endocrine response in humans, particularly oxytocin. Since in the various primary studies partly contradictory results emerged regarding increase/decrease or no change in oxytocin levels, the aim of this paper was to systematically record the results of the individual studies and to formulate considerations on how further research in this field could look like.

Condition being studied The focus of our interest was the relationship between oxytocin and music. The question was therefore whether the multiple

effects of music are mediated, at least in part, by oxytocin and whether bonding in music can therefore be demonstrated by an increase in oxytocin levels.

METHODS

Search strategy The following databases were searched using the keywords "oxytocin music": Pubmed, EBSCO Host and Google Scholars. The results were checked for inclusion criteria by title, abstract and full text. The search and narrowing down of studies was done by two independent investigators.

The systematic review included all primary studies in which there was

1. a music intervention and
2. oxytocin was measured as a parameter in a pre-post design.

Participant or population No limitation was made with regard to the group of people studied.

Intervention All studies that include a music intervention, i.e. both active music making and passive music listening in individual or group settings, will be evaluated.

Comparator No studies are excluded due to the design of the control group. All studies will be included and the differences in the control groups will be taken into account at the end of the evaluation of the results.

Study designs to be included All primary studies are included in the systematic review regardless of their design.

Eligibility criteria No further inclusion or exclusion criteria were set.

Information sources Three electronic databases were used for the literature search: Pubmed, Google Scholars and EBSCO Host (Medline and Psych Articles).

Main outcome(s) The main outcome of the review relates to the pre- and post-measurement of oxytocin concentration in the music intervention group and the comparison between intervention and control group (if any).

Additional outcome(s) Other parameters collected in the primary studies are also recorded in order to determine correlations between oxytocin and other parameters, if applicable.

Data management All data is compiled in an Excel table.

Quality assessment / Risk of bias analysis For the risk of bias analysis, the tools corresponding to the study design are applied, e.g. the Newcastle Ottawa Assessment Scale for case studies or the Jaded Scale for randomised controlled trials.

Strategy of data synthesis The results of the primary studies should be evaluated qualitatively and quantitatively, i.e. the authors' explanations for their results and possibly influencing circumstances should be taken into account. In addition, a meta-analysis is to be calculated on the basis of the study results.

Subgroup analysis Due to the large heterogeneity of the study, a subgroup analysis will be performed with regard to age, gender, health and illness.

Sensitivity analysis A sensitivity analysis will be conducted. Further details are yet to be determined.

Language restriction Journal articles in German and English will be included in the systematic review.

Country(ies) involved The Systematic Review is conducted entirely in Germany.

Keywords oxytocin, music, group singing.

Dissemination plans The systematic review should be published in a journal with a high impact factor. Preferably in a journal that is at the interface of music and medicine.

Contributions of each author

Author 1 - Paula Busse - Author 1 performs the literature search, data extraction, data synthesis and evaluation.

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Author 2 - Dennis Anheyer - Author 2 is involved in the risk of bias analysis and data synthesis.

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Author 3 - Julia Stronski - Author 3 is involved in the literature search and data extraction and is thus the second investigator.

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Author 4 - Thomas Ostermann - Author 4 is involved in conceptualisation, implementation and synthesis of the results.

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