

INPLASY

Efficacy of music therapy on stress/anxiety before dental treatment: A meta-analysis of randomized clinical trials

INPLASY2023120008

doi: 10.37766/inplasy2023.12.0008

Received: 02 December 2023

Published: 02 December 2023

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2023120008

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 02 December 2023 and was last updated on 02 December 2023.

INTRODUCTION

Review question / Objective The objective of this quantitative meta-analytical and systematic approach was to examine the usefulness of music therapy in the management of stress/anxiety that certain patients suffer before undergoing dental treatment. The question of interest was posed according to the PICO's format: Is music therapy a tool that reduces or suppresses stress and anxiety in patients who are going to receive dental treatments?

Rationale Dental treatments often produce, in patients who have to receive them, states of fear and anxiety, inducing them to avoid dental treatment, which results in a poorer quality of life in relation to oral health. Dental anxiety has been shown to be a stress factor and is associated with personal traits, such as fear of pain, generally induced by unpleasant experiences of dental treatment in childhood or incited by others who

have undergone such unpleasant experiences, as well as fear of blood or dental instruments.

Condition being studied Usually, in patients with high anxiety in the dental room, the use of anxiolytic drugs and conscious sedation have been used, however, studies indicate that patients prefer non-pharmacological interventions, mainly due to the low risks involved. Therefore, listening to music to control fear and anxiety during dental procedures is widely accepted by adult patients, parents of pediatric patients and professionals.

METHODS

Search strategy Pubmed (via Medline), Web of Science (WOS), Embase and Cochrane Library was carried out until October 2023. The following terms were used to formulate the search strategies: Anxiety Disorders* OR Stress Disorders* OR Dental Anxiety* / therapy OR Dental Fear* OR Phobic Disorders OR Dental Phobic/ therapy* OR

Dental Fear* AND Music Therapy* AND Humans* AND Randomized Controlled Trial*.

Participant or population Patients with stress and anxiety.

Intervention Conventional dental treatment + music therapy.

Comparator Conventional dental treatment.

Study designs to be included Randomized Controlled Trials (RCTs).

Eligibility criteria 1. English language 2. Conventional dental treatment + music therapy (experimental) and conventional dental treatment (control) 3. Outcome indicators: stress levels (cortisol in saliva) and anxiety levels (Δ SL, Δ AL) 4. Randomized clinical trials (RCTs).

Information sources Pubmed (via Medline), Web of Science (WOS), Embase and Cochrane Library.

Main outcome(s) The four databases consulted yielded a total of 154 records. After eliminating 117 duplicates and 15 more as ineligible for automation tools and other reasons, 29 records were considered suitable and the full texts were obtained for further evaluation, after which, 14 were excluded for cause and 15 were included in the final analysis.

Finally, for the meta-analysis, only 14 studies were used, since the study by Kayaalti-Yüksek and Yildirim evaluated the effectiveness of music in learning toothbrushing behavior in children with high and low levels of anxiety.

Three subgroups: Anxiety, stress and both.

Anxiety: $p=0.03$

Stress: $p=0.79$

Stress + anxiety: $p=0.05$

Statistical significance ≥ 0.05 .

Quality assessment / Risk of bias analysis Cochrane Risk of Bias Tool (RoB2).

Strategy of data synthesis Data to evaluate the efficacy of music therapy on dental stress and anxiety were analyzed using Review Manager software (RevMan Software. Version 5.4.1; The Cochrane Collaboration, Copenhagen, Denmark; 2020).

Subgroup analysis Anxiety; Stress.

Sensitivity analysis Sensitivity analysis was performed by elimination of studies and evaluation

of the influence of low quality studies on the results of the analysis.

Language restriction English.

Country(ies) involved Spain (University of Salamanca).

Keywords dental anxiety, dental phobia, fear, stress, music therapy.

Contributions of each author

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