THE EFFECTS OF SYNCHRONOUS MUSIC ON PATIENTS UNDERGOING MAGNETIC RESONANCE IMAGING

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Introduction

Anxiety and claustrophobic reactions in Magnetic Resonance Imaging (MRI) lengthen the duration of examinations through increasing need of scan repetition, furthermore the need of anaesthesia makes the process costly. The sedative and alleviative effect of music is widely used in therapeutics, but in related research, music was only used with its original tempo as an intervention to reduce anxiety among MRI patients.

Objectives

The present study tested the hypotheses that (1) during MRI examinations listening to music has better relaxation ability than headphone/earplugs alone, and that (2) synchronizing the tempo of the music with the MRI sequences has better relaxation ability than music that is played on its original tempo.

Method

FIELD EXPERIMENT, n=60 outpatients were examined in the Diagnostic Center of Pécs.
3 groups with quasi-experimental assignment: non-music (control), original tempo (random), synchronized (synchron) groups. Different genres with electrostatic headphone. MAX 7 is used for time stretching.
Measures: State-Trait Anxiety Inventory (STAI), Claustrophobia Questionnaire (CLQ), Visual Analogue Scale (VAS), open-ended questions.

Results

Statistically significant interaction between intervention and time (pre- and post-points) on STAI-State anxiety level, $F(2, 57)=5.705$, $p=.006$, partial $\eta^2=.167$. Post-intervention state anxiety score significantly decreased in both music groups (random: $M=4.8$, $SE=1.56$, $p=.006$; synchron: $M=6.95$, $SE=1.61$, $p<.001$), while it did not change significantly in the control group.

Conclusion

Musical conditions and especially synchronization significantly lowered the participants state anxiety level after the examination, while the anxiety level did not change significantly in the control group.
Both the synchron and random groups had significantly more pleasant experience about the examination as a whole than the control group.
However, there was no statistically significant difference in STAI-State anxiety level between groups at the pre-and post-point of the intervention.
Women significantly feel more anxiety before the MRI examination.
The thematic analysis of the open-ended questions suggests that music and the headphones/earplugs work as a protection and noise cancellation tools for the participants; furthermore music caused a positive change in the environment and provided a help; it distracts attention from the examination, relaxes patients and is seen as care and desirable intervention in the future.

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