**Personalized relax music to reduce patient anxiety**

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**Abstract**

Patient anxiety is a frequently occurring concern as it decreases patient satisfaction, increases consultation duration, and can influence successful medical outcome. To illustrate, for some diagnosis methods as PET scans patients need to be relaxed for successful medical outcome. Music can possibly reduce patients stress. However, hospital selected music has not always shown its effectiveness, and patient selected music has shown it could be arousing instead of relaxing. In two experiments the effectiveness of music on subjective- and physiological-relaxation was tested by tuning the music selection to the patient by combining personally selected music with categorized music. In both experiments participants first rated 80 songs on their valence and energy levels. The 80 songs were additionally classified using music-features into the four quadrants of the valence-arousal model. Next, the best songs per emotion-quadrant were selected per participant based on the ratings and the classification. The first experiment tested the mood inducing properties of this personally-selected music on each emotion-quadrant. 20 participants fulfilled four sessions, only varying the music emotion-quadrant, where they fulfilled an office task while listening to music. The second experiment tested the effect of relaxing music while waiting for a MRI. 24 participants listened to the personally-selected relax music, randomly-selected music, or no-music while waiting for an MRI scan (a deception). The first study showed that personally-selected music induced the four moods in the expected way in valence and energy ratings and in physiology ($p<.001$) (e.g., higher skin conductance during high-energy songs). Preliminary-analysis of the second study on 9 participants showed that the personally-selected relax music scored higher on enjoyment ($p=.03$) and comfort ($p=.07$). The current study confirms that the personally-selected calming music can successfully relax persons in the lab as well as in simulated hospital environments and thus is a promising method to increase successful medical outcome.

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