PERSONALIZED RELAX MUSIC TO REDUCE PATIENT ANXIETY

Marjolein van der Zwaag, Tim Tijs*, Joyce Westerink, and Roland van de Molengraaf

aPhilips Research, The Netherlands, 
bMiPlaza Hi-tech Services, The Netherlands

*Contact person: tim.tijs@philips.com, High Tech Campus 34, 5656AE Eindhoven, The Netherlands

Abstract

Objectives. Many hospital patients suffer from medium-to-high levels of anxiety, affecting workflow, patient satisfaction, and possibly medical outcome. Music may be an effective means to deal with patient anxiety. However, while music selected by the patient is usually found pleasant, it is not always calming. Conversely, music selected by the caregiver as calming may not be found pleasant by patients. We conducted two lab studies aimed to investigate whether music that is considered both calming and pleasant by a person (patient) can reduce anxiety.

Method. The first study (N=20) investigated the mood induction effects of 4 moods (positive energetic, positive calm, negative energetic and negative calm) with personally selected music in an office environment. These moods were induced in 8 minutes while participants conducted a Sudoku task in four successive sessions. Physiological state (a.o., skin conductance) was measured continuously. Participants (PP) filled out a UMACL questionnaire after an 8-minute baseline period and after the music mood induction. The second study (N=27) investigated the potential of music on anxiety reduction using a deception experiment. PP were told the experiment comprised 3 parts: music rating, a waiting period, and finally a Magnetic Resonance Imaging (MRI) scan (the deception). During the waiting part (30 minutes, lying in a bed), PP listened either to personally selected pleasant and calming relax music, randomly selected music, or to no music. Physiological state was continuously monitored. Before and after the waiting period, PP filled out the STAI and UMACL questionnaires. Finally, PPs’ comfort and deception were checked in a semi-structured interview.

Results. The first study showed that music is an effective means to induce various moods in the expected way, both in terms of valence and energy (p<.001), and physiology (e.g., skin conductance was higher during high- than low-energy songs, p<.001). Preliminary analysis of the second study on 9 PP suggests successful deception. The personally selected relax music group scores higher on enjoyment (p=.032) and comfort (p=.072), than the other two groups.

Conclusions. The findings demonstrate that music is an effective means to induce a variety of moods including a low-anxiety state in a non-hospital (office) environment. In a more ecologically valid medical environment, i.e., while waiting for an MRI scan, PP are clearly most contented when music is provided that is considered calm and pleasant by the listener. Because the latter test did not induce high anxiety levels we expect to find stronger effects of music on patient anxiety in actual clinical settings, cf. the Law of the Initial Values. The presented results confirm that using personally selected calming music is a promising approach to reduce anxiety in patients, e.g., when waiting for a scan, and thus possibly to successful medical outcome.