MedicalXpress

Soothing sounds during cataract surgery reduces patient anxiety

November 12 2012

New research shows that the use of an audio therapy known as binaural beats can significantly reduce patients' anxiety during cataract surgery. The 141-patient study, conducted in Thailand, is the first of its kind in cataract surgery, which is one of the most frequently performed procedures worldwide, with more than 3 million performed annually in the United States. The research is being presented today at the 116th Annual Meeting of the American Academy of Ophthalmology, jointly conducted this year with the Asia-Pacific Academy of Ophthalmology.

Binaural beat audio therapy consists of two tones that are each pitched at a specific, slightly different frequency, with each tone delivered to a separate ear via headphones. The technique evokes alpha-frequency brainwaves, a state that is linked to relaxation and reduced perception of fear and pain. In this study, the researchers combined binaural beats with soothing music and nature soundscapes that included ocean and forest sounds, to provide a pleasant, familiar experience for patients. (Listen to a sample clip here; use headphones to experience the binaural beat effect.)

The study was conducted using three groups, each consisting of 47 patients, matched for age, gender, cataract type, and other health factors. Patients who listened to a binaural beats-music mix before, during and after the procedure had less anxiety and slower heart rate, compared with the control group patients who do not receive the therapy.

Systolic blood pressure was also significantly reduced in both the

binaural beats-music mix patient group and a second patient group who listened to music only. Control group patients heard the usual sounds that occur in a surgical suite. All patients were assessed before and after surgery using the State-Trait Anxiety scale, a standard test used to diagnose anxiety. Their heart rate and blood pressure were also measured before and after surgery.

The research team focused on cataract surgery because it is usually done under local anesthesia, with the patient awake and continuously exposed to unfamiliar, potentially upsetting sounds such as surgical machinery and conversations between the surgeon and staff. Although the procedure is highly effective and safe, patients may be worried about whether their vision and quality of life will be improved or reduced after the surgery. (Click here to see how cataracts affect vision.) The results were consistent with the finding of previous research on the use of the therapy reducing anxiety in general surgery patients.

"As populations in many parts of the world grow older, it's increasingly important for ophthalmologists to explore new ways to improve patient care for seniors," said Pornpattana Vichitvejpaisal, M.D., of Chiang Mai University, Thailand, who led the research. "Our study shows significant emotional and physiological benefits from adding binaural beats to music therapy for cataract surgery patients. This provides a simple, inexpensive way to improve patients' health outcomes and satisfaction with their care."

Dr. Vichitvejpaisal referenced one of his study participants who reported that during her first cataract surgery, she was afraid from the moment she entered the surgical suite. Though she'd been told it wouldn't take long, the surgery seemed to drag on endlessly. Receiving sound therapy during her second surgery dramatically changed her experience from start to finish. She said that she felt very little anxiety, and that the surgery was over before she knew it.

Provided by American Academy of Ophthalmology