Opera In The OR

Carolyn Y. Johnson, Boston Globe

Massachusetts General Hospital surgery resident Claudius Conrad is building upon his prior work with music in the ICU to research the effects it has on surgeons' learning, speed and accuracy.

Conrad’s research began when he investigated how music affects intensive care unit patients. In a study published in 2007, he tested the effects of music on a group of 10 critically ill patients. Half of them listened through headphones to the slow movements of Mozart piano sonatas for an hour, and half heard no music. Those who heard music needed less sedation and had reduced stress hormone levels, as well as lower blood pressure and heart rates. That work motivated him to turn those same techniques on other parts of medicine.

“What he’s looking at is the subliminal effect that could produce a positive effect on performance. If I’m in some difficult operation, maybe there is some positive effect on my physiology - not even on my conscious mood - that would translate into a better surgical performance,’’ said Dr. Andrew Warshaw, surgeon in chief at Mass. General.

To systematically test the effects of music in the operating room, Conrad created tasks for surgeons to complete on a computer simulator of laparoscopic procedures. He tested the speed and accuracy of eight expert surgeons under different conditions:

- Surgeons performed the tasks in silence.
- While listening to Mozart.
- Accompanied by the chaotic, stressful noise produced by hearing a different stream of music in each ear - one, German folk music; the other, death metal.

He found that:

- The folk and death metal mix increased the time it took expert surgeons to do the procedures, but did not affect their accuracy compared with silence. It also negatively affected their ability to learn a task.
- Their accuracy did not improve when doing the task a second time while listening to the same music.
- While listening to Mozart, surgeons’ speed varied, but their accuracy improved compared with silence.

When Conrad tried the same test on 40 participants who had received no surgical training, he found that the Mozart music also had a beneficial effect when they repeated the procedure. The studies are small and preliminary, but they suggest music may help with learning and indicate even the most proficient surgeons are not immune to stressful noises or distractions. Conrad hopes to conduct follow-up studies to understand how music affects people's ability to learn a task.

Dr. David Rattner, a Mass. General surgeon who participated in the laparoscopy study, said music creates a comfortable and relaxing environment, but its effects seem to have nothing to do with any particular song playing on his iPod, which holds everything from classic rock to rap.

"I must say if I were operating and there was music going and you asked me what was on, I probably wouldn't even remember what music was played,'' Rattner said. "My own view is any sort of high-performance activity - you do better if you're relaxed than if you're tense.''

Conrad is working with others at Mass. General to begin playing music in the emergency room waiting areas to see whether it has an effect on the relatives of patients, which will be measured by surveys. "Music has been part of medicine since the beginning of cultural history,'' Conrad said. "The music can be a unifying element that makes people work toward one goal: the optimal outcome for the patient.''

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