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Jason Kiernan *Clinical Instructor, RN, MSN, NP*

“When I hear music, I fear no danger. I am invulnerable. I see no foe. I am related to the earliest of times, and to the latest.”

—Henry David Thoreau

Just as Thoreau expressed, music has a way of relaxing the mind and transforming the soul. For 30 years, researchers have been trying to harness the power of music to help patients experiencing chemotherapy-induced nausea. Here at the University of Tennessee, one researcher is carrying that work forward.

Jason Kiernan’s journey into research began with a short commute across the Detroit River from Windsor, Ontario, to Detroit, Michigan. Working as a hematology-oncology nurse practitioner at Henry Ford Hospital, Kiernan was exposed to clinical trials focusing on treating patients with blood diseases and cancer.

From there, his interest in research and academia took off. After some gentle persuasion by his wife, Kiernan landed at the University of Windsor, where he helped build a postbaccalaureate hematology-oncology diploma. He began pursuing his PhD at Wayne State University soon thereafter and eventually

found his way to East Tennessee.

As a kid, Kiernan had visited his grandparent’s cabin in Pigeon Forge, cultivating his familiarity with East Tennessee and nurturing his love of bluegrass music. Although classically trained as a pianist, Kiernan converted to Scruggs-style banjo playing after inheriting his late grandfather’s instrument.

Following his two passions—research and music—Kiernan decided the University of Tennessee could offer him the mentorship and research focus he was looking for.

“There is this palpable, tangible kind of push for research and new knowledge generation and academic and scholastic productivities,” Kiernan said. “One of the cool things about being here is that energy.”

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Using music as medicine, Kiernan’s dissertation research—which he is completing through Wayne State while working at UT—focuses on therapeutic listening interventions for patients experiencing chemotherapy-induced nausea.

To begin, Kiernan meticulously examined the past 30 years of studies specifically focused on using music to reduce nausea. By filtering

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through the methods and design of those studies, he discovered improvements that could make future research outcomes more meaningful.

“There isn’t enough data on music alone,” Kiernan said. He noted that some studies had paired music with another intervention, rendering the exact cause of the effect inconclusive.

“At the base of the brain, specific neurotransmitters are responsible for generating the sensation of nausea. When we listen to music we also having neurons talk to other, generating neurotransmission from one neuron to another,” he said.

Kiernan will begin his intervention study later this year. During the course of the study, some participants will engage in a music-listening intervention in combination with their anti-nausea pills for a total of five days, using music they select themselves. A control group will instead engage in a quiet-time intervention with no music.

“We have a massive amount of neural activity that goes on when we listen to music,” said Kiernan. He hopes his research will show there are ways to stimulate neurons via the auditory cortex, offering a different pathway to reduce nausea in patients.

This low-cost form of alternative medicine may offer promising results. With the rising cost of drugs that combat nausea and vomiting, Kiernan is hopeful that music-listening interventions will provide a more affordable alternative to those already experiencing high cancer treatment costs.

Kiernan also relishes the fact that he is working in an area where he can expand nurses’ independent practice.

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“People outside of nursing recognize that nurses contribute knowledge to not only their own practice but to the health of people in general,” said Kiernan. “I want to give back knowledge that nurses can utilize.”

By conducting research in an area independent of other health care practitioners, Klernan hopes to empower other nurses to expand their research possibilities.

During the summer months, Kiernan can be found up north on Cape Breton Island picking away at his banjo and enjoying family time. This three-mile-long island in the northeastern part of Nova Scotia is home to migratory whales and great white sharks. As he observes the seasonal migration of the whales, Kiernan will be thinking about the possibilities of music intervention for nurses and the patients they serve.

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