Engaging the senses: Dance opens up the world of music to children with cochlear implants

Edmonton — For the past 10 years, Dr. Tara Vongpaisal a faculty member in MacEwan University’s psychology department, has been studying children’s perceptual development, with a particular focus on hearing. “Music and dance go hand in hand, and form a lot of children’s daily experiences,” says Vongpaisal. “On a more fundamental level, dance involves an interplay of the senses, but for children with cochlear implants, the integration of music and dance may unlock listening skills.”

Vongpaisal has been studying children with profound hearing loss who cannot benefit from hearing aids, but hear by means of cochlear implants – sensory prostheses that help generate hearing sensations by stimulating the auditory nerve. Her research focuses on finding novel and innovative rehabilitative strategies to help these children optimize the use of their devices. Cochlear implants provide a basic set of time-based cues that can be used to interpret speech, but do not process pitch cues necessary to perceive music and voices.

In her current research program, Vongpaisal is using music as a tool to teach children about the basics of sound, and is incorporating a new dimension that has not been studied before – dance. “If we focus on how the senses integrate and generate multifaceted experiences, this can be an interesting avenue to help children make use of other sources of information to compensate for what they are not acquiring adequately through hearing, which is restricted as a result of deafness.”

To help understand and process music, children need to make use of multiple senses in a music-learning experience, whether tapping or dancing to a beat. That requires children to listen to musical structures, such as rhythm. For children with cochlear implants, dancing and moving along to the beat may be especially helpful in reinforcing their understanding and memory of the sound patterns in music.

“In short, we aim to test children’s listening skills in a way that doesn’t feel like a chore to them,” said Vongpaisal. “Yet our tasks involve some critical manipulation that gives us important insights into how children learn to remember and process what they hear.”

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