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Stroke rehabilitation assessment funded by the Center for Innovation and Research

LANSING, Mich. – Researchers from Michigan State University and Sparrow have been awarded $50,000 by the Center for Innovation and Research to study ways to improve stroke rehabilitation.

The study, led by Rajiv Ranganathan of the MSU College of Education, will utilize a virtual reality environment to examine if its uses could benefit stroke Patients undergoing rehabilitation.

“The importance of this study is reflected in terms of the underlying problem,” Ranganathan, assistant professor of kinesiology at MSU, said. “Stroke is the leading cause of long-term disability and we still don’t have good, effective ways to quantify or treat movement deficits in stroke survivors. By using recent advances in technology, we are hoping that this study can at least provide a stepping stone toward that goal.”

The virtual reality system measures movements with high precision, which are then translated into a game-like interface. “One of the reasons for using virtual reality is because it allows us to separate perception from reality—for example, we can make your movements look better or worse than they actually are. Moreover, by using a game-like interface we can make therapy more engaging.”

The first aim of the study is to use the virtual reality system to assess and quantify motor function for the affected and non-affected sides of the body in 40 stroke survivors. Once their assessments have been made, the researchers plan to determine the effectiveness of unimanual (using only a single hand/arm) or bimanual therapy (using both arms) utilizing the virtual reality system.

Ranganathan brings his expertise to Sparrow for this project, helping set up the virtual reality system and analyzing the data.

For their clinical expertise, Ranganathan is partnering with three faculty from the MSU College of Osteopathic Medicine’s Department of Physical Medicine and Rehabilitation—Rani Gebara, Michael Andary and Jim Sylvain—and with Cathy Hilts, a registered nurse at Sparrow Hospital.

“At Michigan State University, we focus heavily on collaboration that will make an extraordinary impact on our world,” Ranganathan continued. “We hope this project will help create effective strategies for the thousands of Patients across the world who suffer from strokes each year.”

The team started collecting data in late April 2015.

The Center for Innovation and Research, created as a major joint initiative between Sparrow and MSU, aims to seek new projects to continuously improve care and deliver Patient-centered, evidence-based best practice care to individuals who receive care at Sparrow.

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