Researchers develop robots that stop people from falling

by WKRC
Monday, September 12th 2022

SINGAPORE (WKRC) - Researchers have developed another device for elderly care: a robot that catches seniors before they fall.

Studies show that falls are the second leading cause of unintentional injury deaths worldwide and the leading cause of injury-related deaths for people over 65 in the U.S.

The robot, which is referred to as a mobile robot balance assistant, was developed by a team in Nanyang Technological University (NTU). The designers of the machine refer to the motorized wheelchair as Mr. Bah.
The machine has a harness and guard rails that come up to the hips of its user and has sensors that can predict when a person begins to fall. When a person begins to lose their balance, the machine will intervene to prevent them from falling.

One of the leader researchers for the project, executive director of the Rehabilitation Research Institute of Singapore Wei Tech Ang, says he had a personal experience that inspired him for the project.

“My 85-year-old mother, she’s a frequent faller,” Ang said. “After she fell for the first time about 10 years ago, I started having this idea of creating a robot.”

Ang partnered with NTU Singapore researchers and the Tan Tock Seng Hospital to begin designing the machine. Mr. Bah has been tested a group of 29 participants who were patients that suffered from strokes, traumatic brain injuries, and spinal cord injuries.

Mr. Bah helped participants with sitting, standing, and walking, and no falls were reported during the tests. The team wants two versions of the robot, one for hospital use and another at-home version.

The team still needs $4 million in funding to get regulatory approval for markets in places like the U.S., but it is expected to be available in two years.

“One of [the] key strategies is to empower patients,” said Karen Chua, a co-developer of the mobility robot at NTU’s medical school. “We want to make robotics therapies more sustainable and accessible in the community where our patients can lead healthier and happier lives.”