BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Singapore develops portable arm rehabilitation device

November 3, 2020 | News

The compact robot, known as the H-Man, has demonstrated its efficacy in helping patients improve their upper-limb mobility



A new portable arm rehabilitation robot will help patients to carry out robot-aided therapy at home, allowing them to perform intensive exercises without visiting hospitals or clinics, which can possibly reduce the risk of exposure to infectious diseases such as COVID-19. The robot can also be used in hospitals and outpatient facilities such as nursing homes and clinics.

The compact robot, known as the *H-Man*, has demonstrated its efficacy in helping patients improve their upper-limb mobility in a clinical trial involving 60 stroke patients undergoing rehabilitation therapy.

Currently, most robots that are used for rehabilitation purposes weigh up to 70 kgs, require special reinforced housing, are very costly, and are located at hospitals where their operation is managed by occupational therapists.

In comparison, H-Man weighs 14 kgs and can be placed on a normal table. Consisting of a handle shaped like a joystick and a large screen, the patient performs prescribed tasks shown on the screen such as playing a game, while the robot evaluates his or her progress and sends feedback to therapists wirelessly.

The smart robot was developed over eight years by scientists from Nanyang Technological University, Singapore (NTU Singapore) in collaboration with rehabilitation physicians and occupational therapists from the Centre for Advanced Rehabilitation Therapeutics (CART) at Tan Tock Seng Hospital (TTSH) Rehabilitation Centre.

With the successful completion of the clinical trials, the technology was commercialised and spun off into ARTICARES by NTUitve, NTU's enterprise and innovation company.

Moving forward, ARTICARES plans to further harness technologies such as robotics and AI to improve healthcare delivery and to improve the lives of people.