Manual Function Rehabilitation Device for Post-Stroke Patients

Huynh, Man (School: Le Hong Phong High School for the Gifted)
Mai, Khoi (School: Le Hong Phong High School for the Gifted)

The number of people suffering from stroke has increased more than ever. Patients who had been through stroke would often experience temporary or permanent disabilities such as: motor paralysis, cognitive disorders, and visual disturbances. Therefore, physical therapy is essential for the patients in order to reintegrate back to normal, daily life. There are a lot of devices and methods of function rehabilitation for the post-strokes, but most of them consume a lot of money, time, and effort from both the patients and the doctors. And so, our team has come up with the idea of developing a cheap, compact, yet simple and effective device that could be controlled with a phone application to automate the process of hands rehabilitation (the most difficult part of the body to have their functions restored). Aimed to be used by patients at the early stages of the hand rehabilitation process, this device can help patients practice therapy exercises regularly and repeatedly which creates and strengthens neurotransmitters in the brain to regain control of the body part. A phone application would also be used to store data about the process of rehabilitation of the patients and extract those data in forms of graphs for the medical staffs to evaluate the situation. While other methods of hand rehabilitation consume a lot of time, money and effort, combine with highly sophisticated technology that are not yet accessible in some regions, our device uses simple yet effective mechanism that could be easily accessible and easy to control/manipulate. Up until now, the current version of the device and phone application has met the criteria of controlling motors, storing, and extracting data of patients. Performance is still unstable and not yet optimized.

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