

Project Title: Intelligent Health Promotion Service System (IHPSS)

Frailty is a common condition in the elderly population, which will increase the risk of falling and lead to other complications. However, the hospital is often overcrowded, causing a long waiting period, increasing the burden on their family, or arranging unsuitable treatments (training program). These points make patients miss out the best effect on the Acute Phase Rehabilitation. We propose a new rehabilitation service called “Intelligent Health Promotion Service System (IHPSS)” that enables patients to recuperate at home. Moreover, medical professionals can remotely arrange suitable rehabilitation treatments through this new service IHPSS. This IHPSS has three major goals. First, "Intelligentization" helps medical professionals evaluate the suitable treatment with AI. Second, "Gamification" adopts Nostalgic Games to increase patients' rehabilitation motivation. Third, "Customization" customizes their specific treatment based on each individual case. This IHPSS uses the Somatosensory Interaction and Nostalgic Game to arouse elders' resonance, and then increase their rehabilitation motivation. The Intelligent Knee Orthosis can detect each muscle status during training and convert into data. And the Deep Learning can help medical professionals arrange patients the best rehabilitation plan. Meanwhile, the result is transmitted to their family members. This IHPSS provides a new rehabilitation service to reduce the burden of life for patients and their family members, and provides the most suitable rehabilitation treatment to achieve the goals of Ageing in Place, Healthy Ageing, and Active Ageing. This proposal aims to (1) the product prototype of the Intelligent Knee Orthosis and the Somatosensory Interaction Platform, (2) the integration of hardware and software with the clinical trial and pilot studies, and (3) the development of the business model and product commercialization.

Our project IHPSS provides a new rehabilitation service to reduce the hassles for patients and their family members and provides the most suitable rehabilitation treatment to achieve the goals of **Ageing in Place, Healthy Ageing, and Active Ageing**. Achievement **2021 Stanford Center on Longevity Design Challenge Global Top 8, 2021 18th Y.S. Award (Gold Medal) and 2020 Panasonic Green Live Creative Design Competition (Gold medal)**.

Youtube video clip of IHPSS: <https://youtu.be/tzksxoHL41w>

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