



Therapeutic music-with-movement programme for elderly with cognitive impairment won ICT Award 2022*

Research & Innovation

Innovative Life-Enhancing Technology Developed for the Elderly with Dementia and Parkinson's Disease

Supported by the Innovation and Technology Fund for Better Living and the Ho Cheung Shuk Yuen Charitable Foundation, the School of Nursing has collaborated with the Nethersole School of Nursing of The Chinese University of Hong Kong on a project targeting the elderly with dementia. The initiative applies Music with Movement Therapy, comprising multisensory therapy and cognitive stimulation activities, to the development of a stand-alone, tablet-based system and service package to provide flexible training and support to caregivers, greater motivation and interactivity and fun to users, and intelligent data management for assessment.

The intervention has been found to improve anxiety and depressive symptoms of people with dementia and to reduce the stress levels of family caregivers, with information and communication technology helping to enable integrated and coordinated primary healthcare delivery. The project won the **ICT Award 2022 for**

Smart People Smart Aging Silver Award and the Claudia J. Beverly Innovation Award 2023.

Meanwhile, the system has been implemented in about 50 service institutes, **benefiting around 1,000 older adults with dementia.**

Additionally, to tackle movement issues and prevent falls caused by gait disorder among Parkinson's disease patients, a team of cross-disciplinary PolyU academics, supported by the Hong Kong Parkinson's Disease Association, has developed a novel Intelligent Wearable System, which can detect abnormal gait in real-time and provide the wearer with a timely visual and auditory cue to correct it, thus helping the patient restore normal movement.

3 GOOD HEALTH AND WELL-BEING



01

02

03

04

05

06

07

08

09

10

11

12

13

14

15

16

17

Societal Benefit from Medical Device Commercialisation

Harnessing the University's research on ultrasound imaging technologies, two "**Forbes Asia 100 to Watch 2023**" start-ups in the field of advanced medical equipment, Telefield Medical Imaging Limited and Eieling Medical Limited, have been founded, aiming to benefit teenaged scoliosis patients and those afflicted with liver fibrosis.

To overcome the limitations and potential hazards of X-ray imaging as a method for diagnosis and monitoring, a PolyU research team has developed a safer and more cost-effective alternative by applying ultrasound imaging technology to generate an accurate radiography-like image for assessing spinal deformity and measuring spinal curve. The breakthrough is behind the world's first and only ultrasound scoliosis assessment system, Scolioscan®, commercialised by Telefield.

With more than 120 filed or granted patents, Scolioscan® has helped reduce harmful exposure to radiation for **over 20,000 scoliosis patients in Europe, Asia and Australasia.** It also led to a comprehensive five-year school scoliosis screening programme with ultrasound-assisted brace design and monitoring, **benefiting at least 6,000 schoolchildren.** Voluntary organisations from around the world have shown a keen interest in acquiring Scolioscan® for child diagnosis and monitoring.

Telefield has **achieved Pre-A round financing totalling nearly HK\$40 million,** with investors including Fosun Pharma, AEF Greater Bay Area Fund (managed by Gobi GBA), PolyU and other industry backers, and has to-date **secured more than HK\$100 million** for this innovative project.

Teaching & Learning

Establishment of the Department of Food Science and Nutrition

With a view to nurturing food specialists and promoting innovative and sustainable development, PolyU has been granted funding by the University Grants Committee to establish the Department of Food Science and Nutrition (FSN) under the Faculty of Science. It is the City's first academic department specialising in food science and nutrition. To commemorate its inauguration, a two-day International Conference on Food and Human Health was held, which brought together experts to share scientific knowledge on health-related issues and to promote collaboration between the public sector, industry and academia in the pursuit of impactful research on sustainable development.

FSN is dedicated to providing professional training for future food scientists on food safety, food technology, human nutrition and Chinese medicine. By collaborating closely with the PolyU's Research Institute for Future Food and Research Centre for Chinese Medicine Innovation, FSN is committed to taking an interdisciplinary approach to addressing health-related issues and to pursuing impactful research that benefits humanity.



Subject: Healthy Lifestyle Challenges for Developing Communities

For the purpose of enriching students' understanding of global citizenship and the intercultural context of the impact of health dynamics, this School of Nursing service-learning subject aims to raise student awareness of health issues in developing communities, deepen their understanding of the challenges and the needs of maintaining a healthy lifestyle, and provide them with opportunities to offer basic physical assessments and health education to people in these communities.

PolyU students this academic year visited Phnom Penh, Cambodia to carry out a 10-day service project. They worked with a local secondary school, True Vision International School, to provide cognitive and nutritional assessment and education to **some 300 elderly people living in rural areas in Phnom Penh**. Through this immersive experience, students were able to assess the health profile of these older adults and develop teaching plans for health promotion, thereby enhancing the lifestyle of the service targets.



Subject: Learning through Providing Eye Care and Vision Health to the Community

This service-learning subject, hosted by the School of Optometry, has the objective of equipping students with fundamental concepts of vision screening and enabling them to master simple yet crucial tests for vision assessment. Through community vision screening and eye care promotion projects, students can also enhance their understanding of public needs and problems. Since the start of 2022, around 30 vision screening and educational services have been undertaken, **benefiting more than 4,400 people** as of late-2023.

From lecture and practical laboratory sessions, students acquire a fresh perspective in relation to major eye-related health issues that particularly impact underprivileged groups. To address such

concerns, they work closely with community organisations to plan, organise, and conduct vision screening and eye care promotion projects. Through such hands-on experience, students develop a sensitivity to social responsibility, cultural diversity, and active citizenship, which they integrate into their teamwork and service delivery. Additionally, by engaging with disadvantaged communities, students are provided with ample opportunities to hone their communication and planning skills, and more importantly, to reflect on their civic roles and responsibilities, thereby being inspired to develop empathy for people in need.

01

02

03

04

05

06

07

08

09

10

11

12

13

14

15

16

17

Outreach & Engagement



Upskilling Food Delivery Workers to Conduct Health Checks on the Elderly

The School of Nursing (SN) has received a **donation of over HK\$11 million** from the Li Ka Shing Foundation to equip around 40 female Food Angel workers with basic health knowledge to enable them to perform simple health checks when they deliver meals to **some 100 older adults living alone in the community**. This allows their physical vital signs, including blood oxygen levels, blood pressure, pulse and pain indices, to be measured.

The health data collected will be uploaded to mHealth, which is a pilot health management mobile app featuring an interactive nurse support function developed by the SN research team. Registered nurses will be given access to the platform to

evaluate the health status of the older adults, who may receive personal care and interventions via the interactive app when needed. Referrals to allied health professionals or social workers can also be made for early interventions.

The research team found that three to six months' use of the app resulted in a significant increase in self-efficacy and quality of life, and a considerable decrease in depression levels and the use of medical services. It is thus hoped that this first-of-its-kind grassroots community health model, undertaken in collaboration with the Health-Social Partnership, will provide scientific research evidence for the Hong Kong Government to consider introducing the mHealth app and the service model into the community as a way to strengthen primary healthcare.

Eye Care Advocacy for Under-served People in Need

The School of Optometry has been **granted almost HK\$3.2 million in funding** to provide free eye examinations and professional advice for **around 800 children living in subdivided units in Hong Kong**. This project, which won the International Conference of Vision and Eye Research (iCover2024) Best Poster Award, involves a baseline and follow-up eye examination with eyeglass prescription. Additionally, a special-designed lighting device for near-work was given to each child participant to improve the illumination in their home. With the support of Caritas Hong Kong, training was offered to Eye Health Ambassadors recruited in the community to equip

them with appropriate eye care knowledge to share among their peers.

Furthermore, outreach eye care education booths and vision screening services were organised in various communities, locally and overseas, raising the eye care awareness in **almost 4,400 beneficiaries** including preschool children, primary school students, older adults, individuals with intellectual disabilities, people from ethnic minorities, refugees and low-income families in Hong Kong and Cambodia.

Through games and talks, participants learned about the symptoms of basic eye health problems and the importance of timely treatment, and they

also learned about their own visual concerns through vision screenings. Eye care souvenirs were distributed to all participants, with more than 600 pairs of UV-protective wear being provided to schoolchildren and nearly 90 pairs of prescription glasses prescribed to those in need in Cambodia.



Governance & Operations

Providing Mental Health Support to the University Community

The Student Affairs Office has implemented campus-wide student mental wellness programmes, whereby campaigns promoting mental and physical wellness, counsellor-initiated psychological wellness workshops and other wellness promotion initiatives **benefited over 13,000 students** this academic year. A team of trained Wellness Allies was also formed to offer amateur psychological support to their peers.

In addition, counsellors designed and provided over 50 tailor-made therapeutic and psycho-educational group sessions and workshops for **more than 300 students**. Meanwhile, **around 1,400 students** partook in more than 6,000 face-to-face or online individual counselling sessions, and **over 500 students** accessed the Integrated Counselling Service's 24-hour Counselling ChatBot System to seek quality and individualised psychology support.

Furthermore, the Mental Wellness Clinic of the University Health Service offered some 1,100 student counselling sessions with thorough assessments, personalised treatment plans, and

regular follow-up consultations. A safe and accessible environment was also provided for students to explore and strengthen their resilience capacity in the Resilient Students Training Hub, which is a Mental Health Research Centre research-driven education and service initiative that advocates student mental wellness.

Meanwhile, staff members can benefit from the Employee Assistance Programme and access the 24-hour hotline for professional personal counselling and consultation, which handled almost 140 service requests this year.

Advocating Physical Health Awareness and Well-Being

In an effort to educate young people on sexual health, the University Health Service organised a human papillomavirus (HPV) Vaccination Campaign to inform students of sexual and reproductive healthcare topics such as the risks associated with HPV infection, healthy relationships, sexually transmitted infection prevention and contraception. Regular informative sexual health talks have also been hosted. In addition, a free sexual health service hotline was set up for students to speak directly with medical healthcare professionals for guidance and advice.

Similarly, since it was launched, the Cardiovascular Health Awareness Campaign has **educated over 400 participants** on the importance of cardiovascular health, a healthy lifestyle, and early detection and



Health Ambassadors

prevention of related health problems such as high blood pressure and high levels of cholesterol. Additionally, more than 100 Health Ambassadors have been trained to support healthy behaviours in physical and mental health, and to encourage their fellow students to participate in health promotion and prevention activities.

To further advocate physical well-being, the Student Affairs Office welcomed the "Exercise is Medicine®

On Campus" global health initiative and arranged more than 60 workshops, talks, as well as fitness consultations and activities, to foster a healthy and active campus, **attracting over 1,600 participants**. Meanwhile, the mobile application "WellFit" was released to champion the idea of "exercise anywhere and anytime". Not only has it been **accessed by some 1,300 users**, but it also made PolyU the **winner of the Gold Campus Award presented by the American College of Sports Medicine in 2022 and 2023**.

01

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