

Emerging Tech in Mental Health

It has become abundantly clear, particularly in the wake of the COVID-19 pandemic, that the growing needs for mental healthcare cannot be met exclusively by increasing the number of providers. Modern basic and translational research aimed at alleviating this global mental health crisis has evolved significantly, empowered by emerging technological innovation. As a consequence, the size and complexity of data generated in the current research environment requires new methods such as digital- and AI-based solutions.

In this PNIRASia-Pacific symposium, each speaker will discuss the creative use of digital technology to enhance health and wellbeing. Prof. Caroline Cao will describe the application of AI to train empathy in first-responders. She will present work-in-progress that uses a Human Factors approach with extended reality to simulate real-world environments and interactions to elicit meaningful and productive empathy. Dr. Margaret Thairu will discuss the use of digital technology in the form of mobile health (mHealth) apps to bolster health and wellbeing. She will describe the effects of an mHealth mindfulness intervention on symptoms of depression and composition of the gut microbiome and highlight how technology and remote acquisition of biological measures can improve accessibility to mental healthcare. Dr. Huong Ha Thi Thanh will build on this theme by providing evidence that supports the use of mHealth interventions for improving cognitive health. She will present preliminary data demonstrating the acceptability and efficacy of a digital intervention for patients with mild cognitive impairment. Finally, Dr. Cyrus Ho will discuss of the utility of AI in psychiatric research. He will present data that applies deep-learning methods to develop classification patterns for functional near-infrared spectroscopy data to distinguish patients with and without major depressive disorder with the aim of providing objective diagnostic biomarkers. Collectively, these four scientists will highlight ways in which mental health care can be optimized by development and implementation of new digital technologies.