



PRESS RELEASE

Keep calm and carry on: Virtual reality helps medical and nursing students manage agitated patients with empathy

The NUS Yong Loo Lin School of Medicine launches a new virtual reality programme to train medical and nursing students in effective ways of managing agitation while practising empathy and compassion towards patients

Singapore, 26 May 2022 — Caring for patients who are facing stress, anxiety and depression, or when physical restraint is required, is one of the several challenges that healthcare professionals face in the clinical setting.

Compounded by the effects of COVID-19, the rise in mental health issues has led to an increase in instances of agitation and violence against healthcare workers in recent years. As inadequate management of agitation can result in physical and psychological injuries, it is important for healthcare workers to be equipped with competencies in managing agitation safely, holistically, and empathically.

A blended, inter-disciplinary learning approach

To enhance education on managing incidences of agitation in the clinical setting, the **NUS Yong Loo Lin School of Medicine (NUS Medicine)** has developed a new virtual reality (VR) programme to teach medical and nursing students effective management of agitated patients using empathic means, in a safe, repeatable, and controlled manner. Titled “**Virtual Reality in Agitation Management (VRAM)**”, the programme helps students learn the skills while handling VR patients that reflect behaviour characteristics of patients often encountered by healthcare workers.

Led by **Assistant Professor Cyrus Ho** from the Department of Psychological Medicine at NUS Medicine, the team comprises medical and nursing staff, as well as medical students, from NUS Medicine, the Alice Lee Centre for Nursing Studies (NUS Nursing) and the National University Hospital (NUH). As healthcare workers from different disciplines often work together, the team developed the programme to integrate the learning for both doctors and nurses, so as to provide holistic care for patients in the future.

“Moving forward, we will see more distressed patients, and healthcare workers need to have an empathetic response while collaboratively making decisions under pressure. With the blended learning approach, we hope to provide more holistic learning to help future generations of healthcare workers learn the skills of managing agitation, while practising

empathy and compassion,” said Asst Prof Ho, who is also a consultant in the Department of Psychological Medicine, NUH.

Work on the programme began in March 2020, with trials subsequently conducted from August 2021 primarily for a small group of Phase IV medical students and Year 2 nursing students learning about psychiatry and mental health, and further adjustments incorporating feedback from them and inputs from other educators within the team. Following the completion of these trials in May 2022, the programme will be implemented from June 2022 as part of a class module taken by both medical and nursing students, “Managing Aggression using Immersive Content (MAGIC)”. Added to the module’s components of a didactic lecture on theoretical concepts and role play sessions on the practice of communication skills and physical restraint methods, the VR training in agitation management is the first of its kind in Singapore.

Assistant Professor Shawn Goh from NUS Nursing, who is part of the team which developed the programme, also provided guidance from the perspective of nurses. He added, “The VR setting makes it a safe environment for students’ learning, as choosing the wrong response options will not result in harm to anyone. Instead, they learn the appropriate action to take, which will then help them manage real-life scenarios well and avoid threatening consequences for both patients and healthcare workers.”

Scenario guided by real-life experiences

Drawing on their clinically relevant experiences with patients, the two educators included many elements in the programme that are commonly encountered in the clinical setting. In the game, students play the role of a healthcare worker in charge of a ward, attending to a patient who is creating a scene while experiencing drug-induced psychosis with hallucinations and paranoia. Distractors typically seen in an on-call setting are included in the virtual environment, including requests from nurses and family members to follow up on certain tasks, noise from a television in the background, and people who gather around the scene.

“While managing the patient who grows increasingly aggressive and disoriented, students will have to de-escalate the situation by removing objects that could possibly further agitate the patient, choosing the right words to say to patients, and making decisions, such as the correct dosage of medication, and the right time to administer treatment and physical restraint,” added Asst Prof Ho.

The scenario also includes ethical dilemmas, such as whether to covertly administer medication to the patient or discharging the patient against advice, while students learn to piece together what the patient could be feeling through contextual and behavioural clues in the game. After completing the game, tutors guide students through a reflection segment where they watch the playback of how they handled the situation, to help them review their choice of responses and understand the rationale for the decisions made.

Increase in confidence and empathy levels among students

Based on comparison surveys conducted before and after the training from the trials, 92% and 88% of students expressed increased confidence levels in managing patients who are agitated, and in communicating with an agitated person respectively.

Phase IV NUS Medicine student Lim Kia Teng said, "Prior to this programme, we have never learnt how to realistically handle an agitated patient, and work together as a team in such situations. When facing an agitated patient and when under pressure, knowing what to say and do to keep everyone safe is crucial. Going through VRAM has allowed me to come face to face with an agitated patient within a safe space, with close guidance from our tutors."

The surveys also showed that 52% of students expressed an increase in levels of empathy towards patients. "The scenario in VRAM is a reminder that all patients we face have a story of their own. I learnt that being empathic comes with knowing the appropriate words and actions to speak and carry out," said Year 2 NUS Nursing student Kerwin Chia.

Further development plans

The School has prepared 13 sets of the VR gear required for the programme, and students can borrow a set to practise the game at home as the software is made accessible to them without the need for connection to a desktop. The team estimates that a total of 300 medical students and 300 nursing students will go through the programme each year.

Following the launch of the VRAM programme, the team is developing a second scenario for the game, where students experience the first-person perspective of a patient interacting with healthcare workers while undergoing psychosis and while physically restrained, to help them better understand patients and increase their empathic responses. The team will also explore the possibility of a multi-player mode so that participants of different professions can learn to manage a situation together, as well as other scenarios tailored towards community settings such as nursing homes and family service centres, where agitation management skills are often needed.

In addition, the team has further plans to implement the programme as part of workshops for junior doctors and nurses to advance their learning in the area of empathy and agitation management.

About the National University of Singapore (NUS)

The National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education, research and entrepreneurship, with a focus on Asian perspectives and expertise. We have 17 faculties across three campuses in Singapore, with more than 40,000 students from 100 countries enriching our vibrant and diverse campus community. We have also established our NUS Overseas Colleges programme in more than 15 cities around the world.

Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, 30 university-level research institutes, research centres of excellence and corporate labs focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research and cybersecurity.

For more information on NUS, please visit www.nus.edu.sg

About the NUS Yong Loo Lin School of Medicine (NUS Medicine)

The NUS Yong Loo Lin School of Medicine is Singapore's first and largest medical school. Our enduring mission centres on nurturing highly competent, values-driven and inspired healthcare professionals to transform the practice of medicine and improve health around the world.

Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is one of Asia's leading medical schools and ranks among the best in the world (Times Higher Education World University Rankings 2022 by subject and the Quacquarelli Symonds (QS) World University Rankings by subject 2022).

For more information about NUS Medicine, please visit <https://medicine.nus.edu.sg/>

About the Alice Lee Centre for Nursing Studies (NUS Nursing)

Established in 2005, the Alice Lee Centre for Nursing Studies (NUS Nursing) at the NUS Yong Loo Lin School of Medicine is the only institution in Singapore to offer an undergraduate nursing programme for A-level holders and polytechnic graduates. It offers a range of academic nursing degree programmes from baccalaureate to doctoral levels.

The NUS Nursing programme is leading in Asia and ranks among the best in the world. NUS Nursing's principal mission is to nurture the next generation of transformational nurse leaders for clinical practice, education and research, to meet the dynamic challenges of the healthcare system. It will achieve this by providing quality evidence-based education within a student-centred learning environment, and through inter-professional education.

For more information about NUS Nursing, please visit <http://medicine.nus.edu.sg/nursing/>.