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

May 27 2022

NUS Medicine and Nursing students experience the virtual reality programme. Credit: NUS Yong Loo Lin School of Medicine

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](link) has led to an increase in instances of agitation and violence against [healthcare workers](link) 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](link), the NUS Yong Loo Lin School of Medicine (NUS Medicine) has developed a new [virtual reality](link) (VR) program 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 program helps students learn the skills while handling VR patients that reflect behavior characteristics of patients often encountered by healthcare workers. The NUS IT team also provided the team with technical support and advice, while an external vendor was commissioned to help develop the program.

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

Work on the program 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 program 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 program, also provided guidance from the perspective of nurses. He added that "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."

Scenes from the programme. Credit: NUS Yong Loo Lin School of Medicine

Scenario guided by real-life experiences

Drawing on their clinically relevant experiences with patients, the two educators included many elements in the program 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 behavioral 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 says that "prior to this program, 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.

Scenes from the VR programme. Credit: NUS Yong Loo Lin School of Medicine

Further development plans

The School has prepared 13 sets of the VR gear required for the program, and students can borrow a set to practice 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 program each year.

Following the launch of the VRAM program, 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 centers, where agitation management skills are often needed.

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

Provided by National University of Singapore