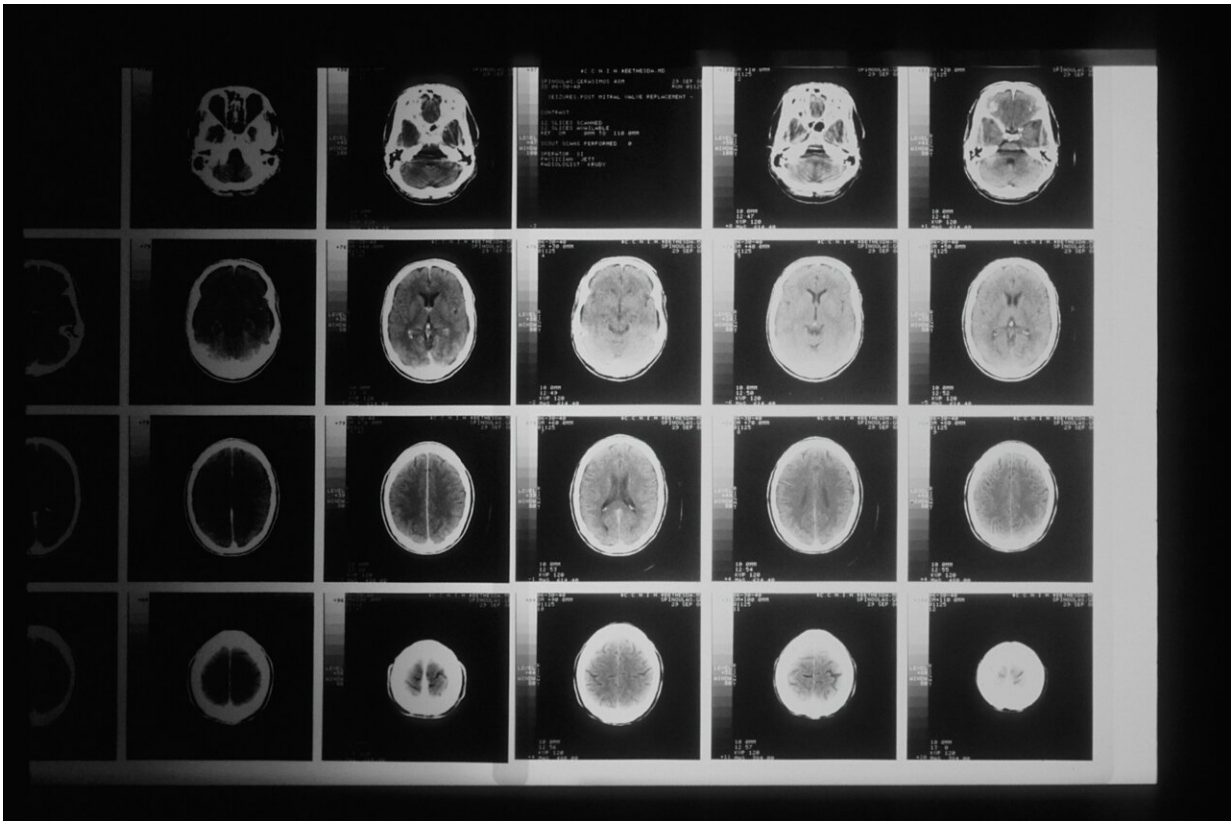


Chatbot tech has potential to transform brain injury rehab

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Using chatbot technology on the recovery journey after a traumatic brain injury (TBI) offers huge potential to keep at-home rehabilitation on track, especially between clinical therapy visits.

A small-scale Flinders University study has identified the potential of the technology—and a specific chatbot called RehabChat which the research team has developed—to help participants stay motivated and on top of goal setting, areas often difficult to manage when face-to-face visits were either spread out or unavailable.

With an estimated 27 million new TBI cases diagnosed globally each year, the Flinders research holds significant potential and takes a stride towards a broader clinical trial in the near future.

Flinders researcher Dr. Judith Hocking said the study found RehabChat played an important role in helping patients overcome some common issues they often experienced, including motivation, memory and goal tracking—areas previously regarded as being reliant on traditional clinical therapy appointments to maintain momentum.

"Our study found that because RehabChat is available in the home, easy to use, programmable and interactive, it can help maintain the rehabilitation schedule between clinical appointments," Dr. Hocking said.

"Significantly, maintaining an at-home schedule and achieving milestones may also better support a pathway to enable the brain to form new neuronal connections which the rehab is intended to help achieve."

Published in the journal [*Clinical Rehabilitation*](#), the research found RehabChat was rated well by those taking part in the study, which included clinicians and patients. The study used quantitative and qualitative responses of six participants regularly interacting with RehabChat.

Dr. Hocking said the overall purpose of RehabChat was to provide a platform that supported clients in between scheduled therapy

appointments, so they continued engaging in their rehabilitation goals and agreed practice activities.

"The clinicians also oversaw their client using RehabChat at weekly appointments, including the content being entered into RehabChat to ensure it was relevant and safe," Dr. Hocking said. "As part of the study, we had two clients and four clinicians testing the effectiveness in a real-world setting.

"RehabChat supported client motivation levels and engagement by enabling the client to make well-thought-through decisions about their rehab in consultation with their [clinician](#). Participant scores for motivation, well-being and therapy engagement showed consistent results and aligned with the [positive feedback](#).

The early results show that RehabChat is easy to use daily and the technology was quickly picked-up by clients and clinicians during the two-week pilot trial.

"We now look forward to expanding the study in due course."

Digital Health researcher Associate Professor Belinda Lange said participants' feedback showed RehabChat had potential to enhance rehabilitation care and support improved clinical outcomes for clients with TBI.

"This study builds upon our earlier research in which RehabChat was co-designed with clients and clinicians using the technology from Flinders University start-up Clevertar," Associate Professor Lange explained.

"The ability to input client goals and practice activities into RehabChat was useful and aligned well with existing rehab options and we will continue developing the technology and evolving the chatbot to meet

clinical needs that benefit client outcomes, engagement with therapy at home and ensure the value of this therapy continues keeping client needs front-of-mind," she said.

"We are conducting further research for RehabChat, through [research grants](#) from the Lifetime Support Authority and the Caring Futures Institute Accelerator Grant scheme. We are recruiting clients with brain injury or stroke, and clinicians, to provide feedback on RehabChat. All participants receive a \$50 gift card."

This current research will really help to prepare RehabChat for wider use in [brain injury](#) rehabilitation.

If you would like to know more about the RehabChat project or know of clients or clinicians who would like to participate in the RehabChat project, please contact the team.

More information: Judith Hocking et al, Mixed methods, single case design, feasibility trial of a motivational conversational agent for rehabilitation for adults with traumatic brain injury, *Clinical Rehabilitation* (2023). [DOI: 10.1177/02692155231216615](https://doi.org/10.1177/02692155231216615)

Provided by Flinders University

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