

New app tests how mood affects cognitive performance

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Researchers from UNSW and UCL are hoping that a newly launched app that tracks an individual's moods and emotions could lead to better management of mental health disorders such as anxiety and depression.

How much do you think your mood affects your brain's ability to perform under pressure?

An app developed by UNSW researchers in conjunction with University College London (UCL) will not only allow you to gauge your mood and how it affects your performance, but will provide vital data on the links between mood regulation and brain functioning.

The [Emotional Brain Study](#) app—released last week on Apple's App Store and Google Play Store—follows on from research conducted in the lab by Dr. Susanne Schweizer from UNSW's School of Psychology. Along with her UCL colleagues, Dr. Schweizer showed that performance in a series of memory and attention-based tasks that were influenced by emotional stimuli can reveal a person's capacity for psychological resilience.

"In the lab, performance on these types of tasks differentiates between individuals who are psychologically healthy and those with a wide range of mental health problems including disorders such as depression, anxiety and schizophrenia," she says.

"What we're really interested in is to confirm that what we've observed in the lab will also be replicated in the world at large as people play the games in this app."

Using the app

Upon launch of the Emotional Brain Study app, users are asked basic questions about their current mood, what they are doing and whether or not they are alone. They are then presented with five different games that measure their capacity to perform [cognitive tasks](#) while being presented with images designed to elicit emotional responses. In a second round, users perform the same tasks but with neutral imagery.

The games require participants to complete various memory and attention based tasks, such as remembering numbers that are presented over either emotional or neutral distractor images, or beating the app at a [card game](#) that uses neutral and emotional card decks.

There are also optional questionnaires in the app to find out whether a person's current mental well-being is related to how easy or difficult it is for them to play the emotional brain games. The results of their performance in the various games will be anonymously recorded by UNSW and UCL's Institute of Cognitive Neuroscience—with the consent of the user.

"If we are able to show these patterns in a large-scale dataset, we can potentially use these types of tasks to detect early signs of low mood in a non-stigmatising and fun way, especially when thinking about young people," said Dr. Schweizer.

"One really valuable advantage that the app will bring is the ability to see people's performance change over time, as well as getting data from people who typically would not come to a lab."

New strategies

Dr. Schweizer says another way the app can be useful to researchers is by providing more data that could be used to inform new strategies to improve users' mental health and how they regulate their emotions.

"Understanding how the abilities tested in the app relate to everyday mood will help us determine which capacities should be targeted with cognitive training interventions," Dr. Schweizer says.

"At the moment we are using a cognitive training that particularly targets working memory, but data from the app study may show that some

people's [mood](#) may benefit more from training other cognitive functions. We can then adapt our training protocols accordingly to improve interventions aimed at increasing people's ability to improve their emotion regulation capacity.

"These cognitive training interventions can then be used to improve dysregulated emotions across a range disorders including depression and anxiety disorders."

Provided by University of New South Wales

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