Smartphone app tackles mental health and issues of data consent

June 21 2019, by Jessica Bassano

Associate Professor Niranjan Bidargaddi. Credit: Flinders University

The MINDtick app was developed in South Australia by Flinders University and mental health technology developer goAct to assist with the early and accurate diagnosis and management of mental illness by allowing access to a person's smartphone data.

The app draws on mobile phone data, such as information about a user's location, to see how a user is spending their day and if that changes over

time. Changes in this pattern can trigger professional mental health intervention when necessary.

MINDtick co-creator Associate Professor Niranjan Bidargaddi said the ability to track any person and gather this data raised the issue of consent.

The app developers are therefore also working on ways to ensure people with mental illnesses can provide appropriate consent when using mental wellbeing apps.

"The app is consciously monitoring changes that are happening in everyday life and looking for subtle changes," he said.

"There are algorithms that analyse the data that has been collected through the app and these algorithms look for anomalies in your activity, your data or your phone call usage data—if you take phone calls.

"We look at the location data streams that come from the GPS sensors and we can see how someone spends their time and what they spend for a typical day. If it's changing over time then that's a warning sign that something has changed."

The app, which is being trialled through Flinders Medical Centre Psychology Service and offered to people who come through the emergency department, feeds information back to a patient's therapist to help personalise care.

Associate Professor Bidargaddi would ultimately like the app to be able to be accessed by a range of health professionals, such as GPs.

"An app like this can close that gap in diagnosis and clinical practice," he said.

"A clinical physiologist or physiatrist can see what is happening with a patient from the clinic and get a better picture of that person, as opposed to asking the patient and relying on them to remember what happened."

While Associate Professor Bidargaddi is excited about the potential of improving mental health care delivery, he said the next challenge was ensuring people with mental illnesses understood how their smart phone data may be used.

He said one of the underlying hurdles for any app developer wanting to treat people with mental illness is that the nature of mental illness can make it hard to process information.

"We have that extra difficulty in raising awareness by virtue of their limited cognitive abilities to process these things," he said.

"There are no clear guidelines or clear processes in place, so we are grappling with good practice around how to engage consumers in that process."

MINDtick is among a growing number of mental health apps aiming to improve diagnostic processes and treatment.

One app from the University of Adelaide measures cognitive deficits associated with major depressive disorder.

Others, such as [My Coping Plan](#) which was developed by Clinical Psychologist and Senior Lecturer at the University of South Australia Dr. Helen Stallman, guide people through dealing with stress.

Dr. Stallman said issues of consent can be particularly difficult when people are in the midst of mental health crisis.

"How well can you give consent when you're actually quite unwell?" she asks.

"I think one of the things that is needed is someone going through the app with people and talking about how that information is used. Not just having a quick screen at the beginning of your app that you click through.

"Also, potentially coming back to that sometime later so people can give better consent and withdraw that consent if they're not happy with it."

Associate Professor Bidargaddi hopes that when MINDtick is released in 2020 it will be an example of best practice for ensuring consumers are appropriately providing data [consent](#) when utilising mental [health](#) apps.

"Part of the process is educating people about what information is collected and how it is used and how it can be safeguarded from any future potential misuses as well," he said.

Provided by The Lead