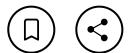


NTU researchers develop way to detect depression risk using data from wearable technology



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Nanyang Technological University

Professor Josip Car (left), director of the centre for population health sciences at NTU's Lee Kong Chian School of Medicine, and senior research fellow Dr Iva Bojic, were part of a team that developed a way to detect depression risk through smartwatch data.

SINGAPORE — Researchers from Nanyang Technological University (NTU) have developed a way to analyse data from wearable technology like Fitbits and other

smartwatches, to help detect individuals with an increased risk of depression.

Using indicators like heart rate and sleeping patterns, the system has proven to have a 80per cent accuracy rate of detecting individuals with a high risk of depression.

Work on the programme, called the Ycogni model, started in October 2019 and involved a study of 290 working adults in Singapore.

Participants wore a Fitbit Charge 2 device for two weeks and completed two health surveys which screened for depression — once at the start and the other at the end of the study.

They were instructed to wear the tracker at all times and to remove them only when taking a shower or to charge the device.

The data that was extracted and studied included the number of steps taken, heart rate, energy expended and sleep patterns.

Analysis of the data found the following associations between certain indicators and mental health:

Less regular sleeping patterns, such as varying waking times and bedtimes were associated with higher tendency of depressive symptoms.

Healthy people demonstrated a greater regularity in the timings when they woke up and went sleep.

Those who had more varied heart rates between 2am and 4am, and between 4am and 6am were more prone to severe depressive symptoms.

The team of four researchers published their findings in November last year.

Asked at a press conference on Monday (Jan 24), when the detection system would be released for use, Associate Professor Georgios Christopoulos from NTU's Nanyang Business School, said his team was "thinking about how to apply this into practice" as such data can be "sensitive and private".

The team is thinking of linking their programme to a smartphone application that users can download to track the data collected from their wearable technology such as Fitbits and Apple Watches.

Users would be able to access the data collected and view their depression risk first, before being prompted to share this data with healthcare professionals.

This is to prevent users' data from being distributed without their consent.

"That's our early thinking. As we develop the programme further, we also want to do further research on what is most acceptable to people who use it, recognising that at times, mental health can be stigmatizing," said Professor Josip Car, director at the centre for population health sciences at NTU's Lee Kong Chian School of Medicine, who was also part of the research team.



“This is a study that, we hope, can set up the basis for using wearable technology to help individuals, researchers, mental health practitioners and policy makers to improve mental well-being,” said Assoc Prof Christopoulos.

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