

Fitness app soon to nudge diabetic, hypertensive patients

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Diabetic patients will be able to get reminders, updates and tips on eating better, exercise and health-related habits when a new fitness application is rolled out soon.

Developed jointly by the National University of Singapore (NUS) School of Computing and healthcare provider SingHealth, the Empower app will be able to give diabetic and hypertensive patients tailor-made nudges.

The notifications are based on the patient's daily physical activity goals, food intake, medication and blood pressure, which users can set for themselves.

The app will then trigger reminders when needed and encourage users to achieve their recommended level of physical activity.

The app uses artificial intelligence (AI) to analyse data collected from wearable devices like smartwatches.

It can be paired with Fitbit smartwatches and obtain data from the Apple Health app. User data will be protected with a password and authentication system, encryption and other tech safeguards.

Since 2021, the app has been made available for download on the Apple App Store and Google Play Store to about 1,000 diabetic participants who are involved in a clinical trial for the app, said a report on the NUS website.

In response to queries, Professor Teo Hock Hai, from the NUS Department of Information Systems and Analytics and principal investigator of the project, said he and his team from the NUS School of Computing used cutting-edge technologies in data analytics and AI algorithms.

He said: "Leveraging cutting-edge technology can empower individuals to actively manage their health by providing them access to personalised health and lifestyle information, smart monitoring tools, and communication platforms with healthcare providers.

"This approach ultimately fosters informed and shared decision-making and encourages proactive self-care, moving away from a physician-centric practice."

The app can help patients, for instance, by analysing the food they eat and making recommendations using photos they upload.

The app identifies the food types present in the photos to determine if users are eating healthily, and delivers personalised dietary recommendations.

Equipped with an AI-powered chatbot and live chat functions, the app can also connect users to health coaches and healthcare professionals. Users can then ask questions and get advice on how to manage their chronic conditions.

Early test results have been encouraging, said Prof Teo. The nudges, for example, were found to be about 85 per cent accurate in helping to predict physical activity behaviour, and were then personalised for users based on their needs.

Preliminary results showed that participants who used Empower kept their minimum step count requirements at about 50 per cent throughout the study, compared with 40 per cent for those who did not use the app.

The NUS team is in the final stages of analysing the preliminary results, before the app becomes available soon for members of the public to download.

Associate Professor Low Lian Leng, director of the SingHealth Centre for Population Health Research and Implementation who was involved in the project, said smart technological tools like Empower can help patients reach the goals outlined in the Healthier SG framework, which is to get patients and the community to better manage chronic conditions and take charge of their health.

Healthier SG is Singapore's new preventive care strategy to encourage people to become healthier.

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