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Duke-NUS' mobile health programme simplifies T2DM health outcomes

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Programme designed to help patients self-manage disease and improve health outcomes through goals and activities, with help of smart devices Ã¢â?¬â?? and, potentially, financial incentives.



The most economical and simple way to manage health problems can often be the most difficult to implement because they require lifestyle changes. Researchers at Duke-NUS Medical School aim to make it easier for people with Type 2 Diabetes Mellitus (T2DM) to self-manage their disease and improve health outcomes through a mobile-based lifestyle management programme that harnesses smartphone and smart health technology, with a financial incentive of up to S$1,000 equivalent in credits to spend on health and wellness needs.

“Technology can radically change the way we deliver healthcare by utilising cost-effective and scalable mobile health solutions,” said Professor Eric Finkelstein, Principal Investigator of the study by Duke-NUS’ Health Services and Systems Research Programme. “What is required in Singapore is a low-cost strategy that effectively manages risk factors for chronic disease without overwhelming the public healthcare infrastructure.”

The Duke-NUS study – titled ‘Randomised Trial to Slow the Progression of Diabetes’ (TRIPOD) – aims to assess the effectiveness of the programme in improving outcomes for people with T2DM. This low-cost initiative involves a number of interdependent and interactive components.

Firstly, a custom-built smartphone app called M-POWER provides users (people with T2DM) with a one-stop portal to support and improve their self-management of the disease. Users are assigned weekly activity goals to facilitate positive lifestyle changes and longer-term health goals to improve health outcomes. Activity trackers, glucometers, and medication adherence trackers capture key user data, which are subsequently displayed on the M-POWER app in graphical format for easy comprehension. The app includes gamification elements, such as enabling users to compare their personal results with those of other users, as well as showing them their current and best streaks (the number of consecutive weeks that they achieved their weekly targets).

Applying economic theory, the researchers developed an incentive scheme and rewards programme, called M-POWER Rewards. Participants who have been assigned to the M-POWER Rewards programme can earn up to S$1,000 worth of credits that can be redeemed for outpatient, health and wellness-related expenses.

Prof Patrick Casey, Senior Vice Dean for Research at Duke-NUS, commented, “This innovative trial can help in identifying feasible interventions and incentive models that can potentially slow disease progression and reduce acute episodes among people with T2DM – and do so in a cost-effective manner.”

While the trial has already launched, the researchers are still in the process of recruiting the over-300 individuals needed for the study. Specifically, they are looking for people who:

1. have been diagnosed with T2DM,
2. are not on insulin,
3. are on oral diabetes medication, and
4. have sub-optimal control of their blood glucose levels at the point of recruitment.

People who are eligible to participate will need to be undergoing regular follow-up for their condition at Singapore General Hospital, Changi General Hospital or anyone of the SingHealth Polyclinics. The trial will last for two years for each participant, and the study is expected to take up to four years to complete.