

00358 A Single-arm Feasibility Study of GlycoLeap, a Mobile Lifestyle Management Program for People With Type 2 Diabetes

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Aims: Forecasts predict that without successful interventions, the lifetime risk of developing Type 2 Diabetes (T2DM) in Singapore will be one in two by 2050. Using relevant dimensions of the REAIM evaluation framework, this feasibility study assesses the scalability and potential effectiveness of GlycoLeap—a T2DM lifestyle management program delivered through a smartphone application—as an add-on to standard care. This is the first study in Singapore to explore the possible integration of a comprehensive mobile health program for adults with T2DM with usual care.

Methodology: This 24-week, single arm, pre- and post-intervention evaluation study involved 100 T2DM patients recruited from a community healthcare facility. Four dimensions of the RE-AIM framework were evaluated: (1) Reach (percentage who consented to participate out of all patients approached), (2) Effectiveness [percentage point change in HbA1c (primary) and weight loss (secondary) between baseline and post-intervention], (3) Implementation (program fidelity as assessed by various participatory metrics), and (4) Maintenance (post-intervention user satisfaction surveys to predict GlycoLeap's sustainability).

Result: Reach: 13.2% of patients approached (n=785) consented to participate. Effectiveness: Preliminary results reveal that participants (n=83) achieved an average percentage point decrease in HbA1c of 1.27% and average weight loss of 1.9 kg. Implementation: On average, participants (n=87) completed 3.5 out of 24 lessons, logged 1.0 blood glucose measurements weekly (meeting 25% of recommendation), 1.9 weight measurements (exceeding recommendation by 1.9x), 2.0 food logs, and sent 2.3 messages to their health coach per week.

All measures of engagement decreased with time. Maintenance: 74% of participants (n=80) rated the smartphone app "good/very good" and 79% "would probably/definitely recommend" the app to others.

Conclusion: Preliminary results suggest improvements in HbA1c levels and overall positive experiences with the app, though more should be done to improve and sustain engagement. These results support the recommendation to proceed with a randomized controlled trial of GlycoLeap.