Project Title

Conversational Agent for Healthy Lifestyle Behaviour Change: An online feasibility study

Project Lead and Members

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Organisation(s) Involved

Lee Kong Chian School of Medicine, Nanyang Technological Institute (Singapore) Hamilton Health Sciences and McMaster University, Hamilton (Canada), Imperial College London (United Kingdom)

Healthcare Family Group Involved in this Project

Medical

Specialty or Discipline (if applicable)

Family Medicine, Primary Care, Evidence-based Medicine Research Group

Project Period

Start date: August 2019

Completed date: December 2019

Aims

To test the feasibility and acceptability of using a conversational agent promoting healthy lifestyle changes for the general population in Singapore.

Background

Please see attached poster

Methods

Please see attached poster

Results

Please see attached poster

Lessons Learnt

- A recruitment period of month than 4 weeks (one month) is needed to achieve a larger sample size.
- Introducing an in-person component either at recruitment or follow up (as a debrief) could have helped enhance the legitimacy of the study.

Conclusion

Please see attached poster

Additional Information

This project attained the Merit Award (Category: SHBC Student Awards (Open Category)) at the Singapore Health & Biomedical Congress (SHBC) 2021

Project Category

Technology, Digital Health, Chat Bots, Care Continuum, Primary Care, Population Health

Keywords

Conversational Agent, Feasibility Study, Healthy Living, Behaviour Change

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Conversational agent for healthy lifestyle behaviour change: an online feasibility study

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Background & Objectives

Interventions promoting healthy lifestyle changes have been proven effective in reversing prediabetes. Technologies such as conversational agents could implement such healthy lifestyle changes. This project explored the feasibility and acceptability of using a conversational agent promoting healthy lifestyle changes for the general population in Singapore.

Methods & Study outline

75 participants were recruited via Facebook for an online single-arm feasibility study where they had to interact with a conversational agent delivered through Facebook Messenger for 4 weeks. Messages were sent four times a week for four weeks and the conversations were focused on diet, exercise, sleep and stress. We assessed feasibility of recruitment and retention, participants' satisfaction and usability of the conversational agent.

Figure 1. Examples of interactions with the conversational agent "Precilla"

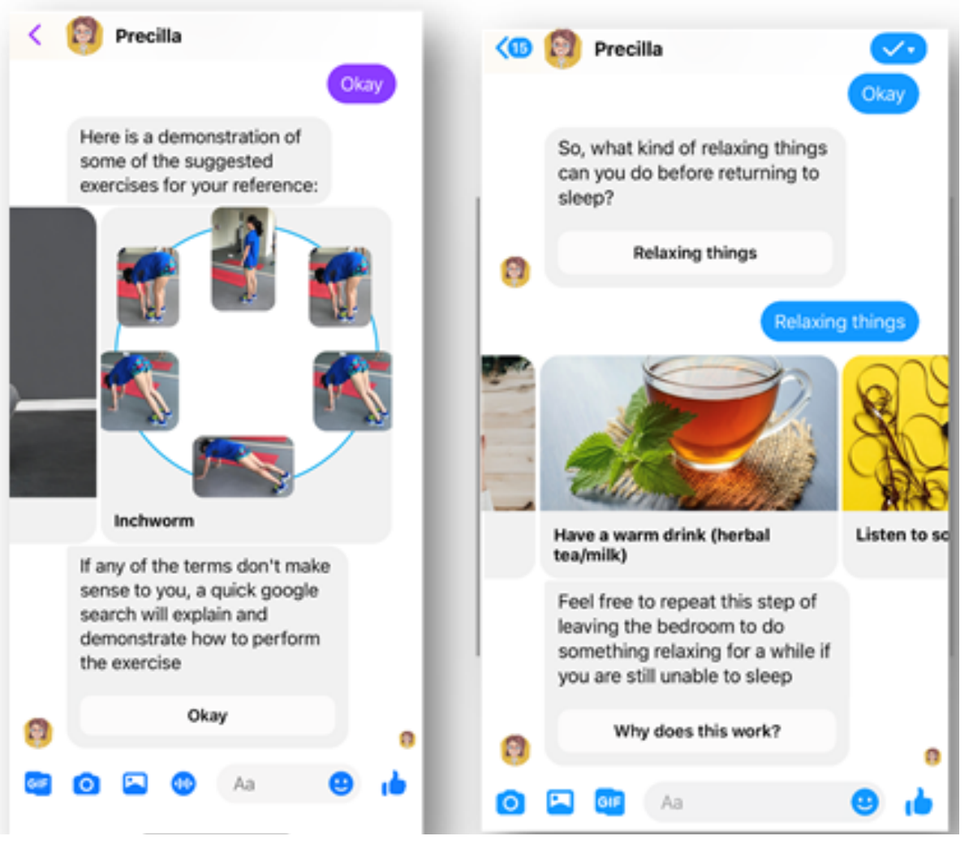

Figure 2. Study workflow

Findings - Feasibility & Acceptability

Of the eligible participants, 60 provided digital informed consent and completed baseline assessments whilst 56 followed the study through till completion. Retention was high, at 93% (56/60), as was engagement, denoted by 50% of participants communicating with the conversational agent at each interaction. Acceptability, usability, and satisfaction were generally high and participants provided some suggestions for future improvements for the intervention. Effectiveness was not studied in detailed and must be further explored in future studies.

Conclusions

The delivery of a conversational agent for healthy lifestyle behaviour change via Facebook messenger was feasible and acceptable with the general population in Singapore. We were unable to recruit our planned sample using free options in Facebook exclusively. However, participant retention and conversational agent engagement rates were high. Our findings provide important insights for a future randomised controlled trial.

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