

Project Title

Improving the User-Friendliness Score of the JH FoodLg App

Project Lead and Members

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Organisation(s) Involved

Ng Teng Fong General Hospital

Aims

The aim of this project is to have a two-fold increase (0.42 points to 0.84 points) of the user-friendliness score of JH FoodLg by March 2019

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

It is important to gather regular feedback from end-users to enable continuous improvement based on feedback received. Major app updates temporarily caused a system lag, which may have caused a drop in user-friendliness score

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign

Keywords

Ng Teng Fong General Hospital, Service Design, Quality Improvement, Improvement Tools, Ishikawa, Patient Experience

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IMPROVING THE USER-FRIENDLINESS SCORE OF THE JH FOODLG APP

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- SAFETY
- PRODUCTIVITY
- PATIENT EXPERIENCE
- QUALITY
- VALUE

Define Problem/ Set Aim

Introduction

The Lifestyle Intervention Programme (LIVEN) is NTFGH's lifestyle programme for persons with prediabetes. One key feature of the programme is the use of mobile applications (apps) for participants to monitor their progress and work towards their health goals.

JurongHealth FoodLg (JH FoodLg) is an app created in collaboration with National University of Singapore's Smart Systems Institute for LIVEN's participants. The app is used in LIVEN to track the participant's diet, physical activity and as a communication platform between facilitators and participants.

JH FoodLg was evaluated using a User Experience Questionnaire (UEQ), which is a validated 26- item questionnaire that measures an app's usability. One key aspect in determining the compliance of an app is the user-friendliness score. User-friendliness refers to "how easy it is to get familiar with the app and to learn how to use it". Improving the user-friendliness score is likely to increase the participants' compliance to the app. The average baseline score for JH FoodLg's user-friendliness was 0.42 points in August 2018. This is way below the maximum score of 3.00.

Project aims

The aim of this project is to have a two-fold increase (0.42 points to 0.84 points) of the user-friendliness score of JH FoodLg by March 2019.

Establish Measures

The main outcome measure for this project is the user-friendliness score of the JH FoodLg app, as determined by LIVEN participants completing the User Experience Questionnaire (UEQ).

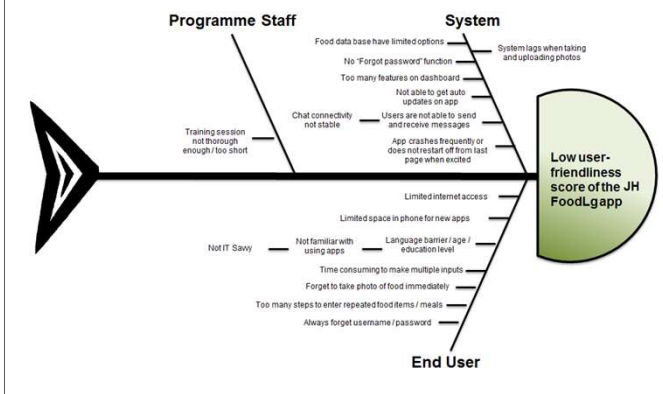
This questionnaire is given to LIVEN participants (n=7) every two months of each cycle. The purpose of collecting feedback over a period of time is to determine if the user-friendliness of the app would improve with subsequent changes made to the app.

Analyse Problem

Written feedback was received from the LIVEN participants in August 2018 to determine the reasons for the low user-friendliness score of JH FoodLg (see Figure 1). We selected those areas specific to the JH FoodLg app itself that could be modified. Eight areas for improvement were highlighted:

1. No "forget password" function: users failed to log into their accounts if they had forgotten their password
2. No dynamic updates: Users need to constantly exit and restart the app to see updates or changes
3. No option to upload food entries without photo (e.g. if users forgot to take picture of their food)
4. App crashes periodically: app system is unstable
5. Chat connection is intermittent: users do not receive the latest messages
6. Too many features on dashboard: confusing for users to navigate
7. Food database has limited options in terms of types of food available
8. Tedious to re-enter commonly eaten foods

Figure 1. Root cause analysis using feedback gathered from LIVEN participants



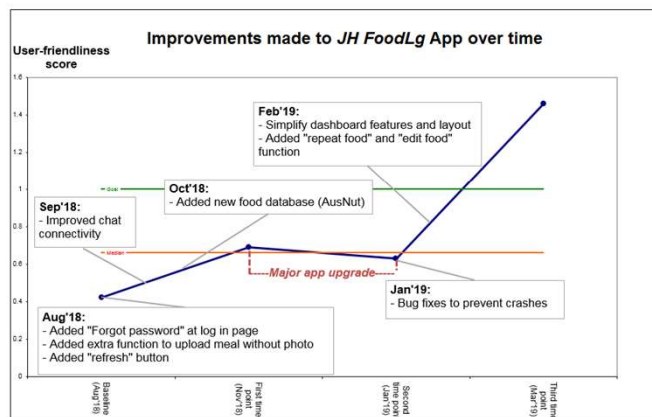
Select Changes

Table 1. Matching key areas for improvement to potential solutions

Key areas for improvement	Potential solutions
No "forget password" function	Add "forget password" function
Have to exit and restart app to see updates	Add "refresh" button
No function to upload food entries without photos	Add "free text" function to enable adding of meal entry without a photo
App crashes periodically	Bug fixes to increase stability of system
Chat connection intermittent	Improve chat connectivity
Too many features on dashboard	Simplify features on dashboard
Limited food options in database	Add extra food database
Tedious to re-enter commonly eaten foods	Add "repeat food" and "edit food" functions

Test & Implement Changes

Figure 2. Run chart depicting changes in user-friendliness score as improvements were made to the JH FoodLg app over time



What were the results of the improvements made?

User-friendliness score as assessed by the UEQ improved from 0.42 points at baseline to 1.46 points in March 2019 (more than a three-fold increase). This exceeded the initial predicted goal of 0.84 points.

Spread Changes/ Learning Points

What key lessons were learned? What were the limitations?

1. The overall increase in user-friendliness score suggested that it is important to gather regular feedback from end-users to enable continuous improvement based on feedback received.
2. Major app updates (Nov 2018, Jan 2019) temporarily caused a system lag, which may have caused the downtrend in user-friendliness score between Nov 2018 and Jan 2019. However, once the changes were made and when the system lag was resolved, the user-friendliness score improved.

How will the changes be sustained?

LIVEN facilitators (dietitian, physiotherapist) will continue to gather feedback on the use of JH FoodLg via the UEQ on a two-monthly basis during each LIVEN cycle in order to make continuous improvements to the app, until the user-friendliness score of the app ideally reaches 2.40 (80% of the maximum score of 3.00).

What improvements can be made?

The results from this project can be applied to other apps that track diet and physical activity. Beyond this, there are also other aspects of the JH FoodLg app, such as efficiency and innovation, that can be improved on. These can be evaluated in future projects.