



bWell: a mobile application for self-management of arm and shoulder exercises after breast cancer treatment

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BACKGROUND

- Upper limb dysfunction (ULD) after axillary surgery or radiotherapy can lead to reduced quality of life and limitations in daily activities [1,2].
- Post-operative exercises have proven to be safe and effective in reducing symptoms [3,4], but adherence to the exercises often declines over time [5,6].
- Study aim: to develop an app based on user preferences and behaviour change techniques to enhance self-management of post-operative exercises.

METHODS

Phase 1

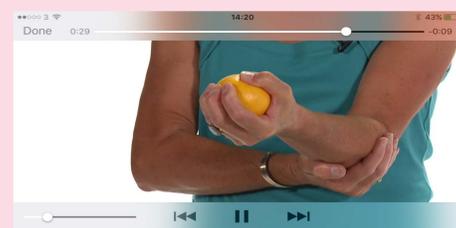
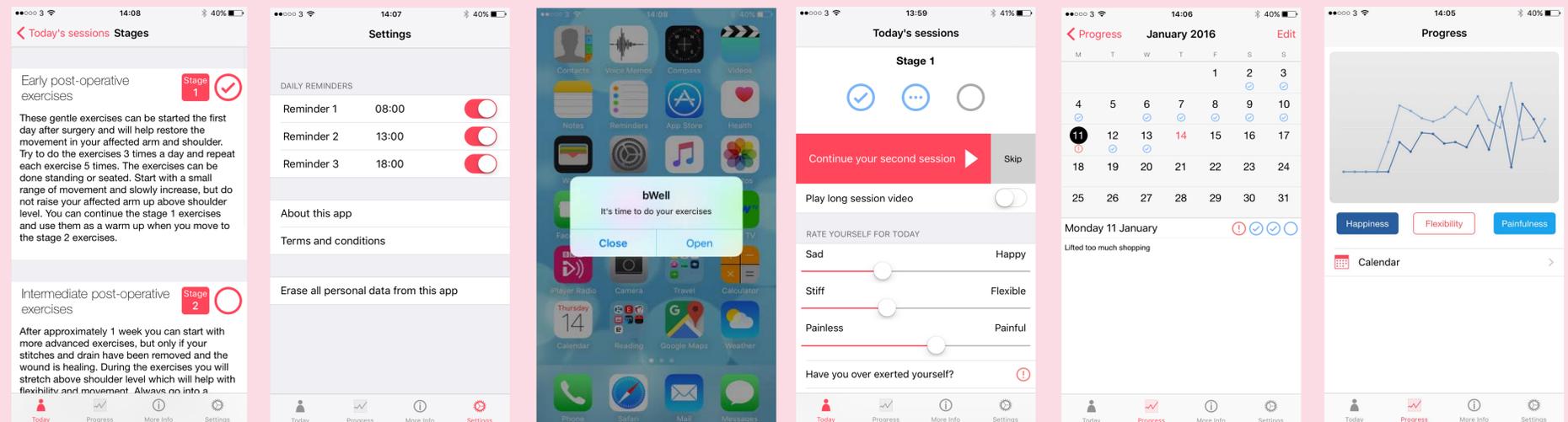
- Two focus groups with 9 breast cancer survivors (47-65 years, 3-18 months after diagnosis) were conducted to inform the design of the app (i.e. evaluate experiences with postoperative exercises, define features of importance and interest, collect user feedback on design plan and wireframe).
- An evidence-based postoperative rehabilitation program was developed in consultation with a registered physiotherapist.
- A prototype of the app was created for further testing.

Phase 2

- Field-testing of the app (bWell) in patients receiving surgery with/without radiotherapy for breast cancer. (Recruitment started in January 2016 and is ongoing).

DEVELOPMENT OF THE APP

- Participants suggested to include: educational content, demonstration videos, and motivational and self-monitoring features (e.g. reminders, ratings, graph plotting, diary/calendar function).
- The evidence-based rehabilitation program has three stages with early, intermediate and late post-operative exercises, and is focused on passive and active mobilisation, stretching and strengthening.
- A script for filming (with clear and reassuring instructions) was written by the research team. All exercises were filmed in a studio and demonstrated by a volunteer who was treated for breast cancer herself. Videos of the individual exercises and an exercise program for each stage were included in the app.



SUMMARY: bWell, a novel iOS mobile application was developed for smartphone and tablet use by breast cancer patients, health care professionals and academics to increase self-management of arm and shoulder exercises after breast cancer treatment.