

A user-centred approach to developing bWell, a mobile app for arm and shoulder exercises after breast cancer treatment

Article (Supplemental Material)

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Supplementary material - Table I: Results Focus Group: mobile app requirements and features

Mobile app features (+)	Representative quotes
Video demonstration and verbal instructions (+)	<ul style="list-style-type: none"> • <i>I think it is important that the exercises are demonstrated, therefore you got to have a visual element as well as someone speaking to you, that's important [Participant 7]</i> • <i>Quite honestly seeing a video with someone doing it rather than a flat picture would have helped enormously. The words [in leaflets] are quite ambiguous; don't fit the image very much ... a short video of each [exercise] so you can look at it, and in a class. If someone did the exercises with you ... It could be your own personal coach [Participant 8]</i>
Tailored information (+)	<ul style="list-style-type: none"> • <i>If you could have an app that would have that information on there, so week 1 what to do, that manages your expectations and tells you what you can and can't do? [Participant 4]</i> • <i>There could be buttons tailored to different circumstances. Something like 'post-surgery 1-7days', 'post-surgery with drain', ... it might reassure someone [Participant 5]</i>
Push notifications (+)	<ul style="list-style-type: none"> • <i>I think notifications in terms of time would be really important. So not just on screen but if it was a buzz or a musical note, an alarm to remind people that it's time to do it again [Participant 8]</i> • <i>So it could be that you did it [the exercises] and then it reminded you that you still got to do it so many times [Participant 4]</i>
Timer on exercises (+) ^a	<ul style="list-style-type: none"> • <i>For some moves it should be interested to know how long to do them. Have a timer on it. You should be holding it for a minute, or holding at a stretch point. [Participant 5]</i> • <i>You could have a timer showing how long you should be doing the exercise, a timer that ticks down [Participant 3]</i>
Goal setting	<ul style="list-style-type: none"> • <i>There're problems with goals because they are different for everybody [Participant 4]</i> • <i>Maybe some older women could be quite put off by that, it needs to be encouraging. If they're doing anything at all it's good, especially at first. It [the app] just has to encourage people to do it [Participant 5]</i> • <i>If you didn't reach them [your goals] you would feel a bit down [Participant 1]</i>
Track exercise performance (+)	<ul style="list-style-type: none"> • <i>Like a school teacher, tick you've done it, and it will tell you to do the next one [exercise] [Participant 7]</i> • <i>There should be a checklist with how many times you should do it and the recommended times that you should be doing it ... You can log in each day and see what you've done, it gives you feedback [Participant 6]</i>
Progress tracker, including graphs (+)	<ul style="list-style-type: none"> • <i>That's [graph] really good because when you're in it every day, it's really easy to forget that last week you couldn't lift your arm and that you can see I can do it now, I'm obviously making progress! [Participant 4]</i> • <i>Your personal graph, it's encouraging [Participant 2]</i>
Reassurance about abilities and progress (+)	<ul style="list-style-type: none"> • <i>But you can have someone saying 'Don't worry if you're meeting it this time, you can work towards it [Participant 6]</i> • <i>It's helpful to be told what to expect and how you should feel [Participant 7]</i>
Motion capture device for movement analysis and feedback	<ul style="list-style-type: none"> • <i>I thought I was doing really well with the exercises until I stood in front of the mirror... Then I realised that it [affected arm] wasn't quite doing what it should be doing, so it [an app] should be... that should be part of it, that you actually look at yourself [Participant 4]</i> • <i>So if you were able to have a trajectory measure of someone holding the phone in their hand and doing the exercises and you would be able to provide feedback on whether someone ... made it from here to here, for example [Participant 8]</i>
Real life stories	<ul style="list-style-type: none"> • <i>That idea about everybody stories, you could have a real story, 'This is my life and I did do the exercises' [Participant 4]</i>
Social support function	<ul style="list-style-type: none"> • <i>It could be a social possibility. If there was a social forum so that women who are going through the same thing, that they can support each other ... have reassurance from peers if you're having a bad day. If the app could support that, I think that would be really, really good [Participant 8]</i>
Endorsement HCP	<ul style="list-style-type: none"> • <i>I wondered if the app could include some sort of video with a breast care specialist and perhaps past patients endorsing the exercise program and the importance of it [Participant 5]</i>

(+) = included in bWell; HCP = health care professional

^aTiming of the exercises (i.e. how long to hold a stretch, number of repetitions) was included in the film script