Human-Centered Development of an Activity Diary App for People with Depression

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Introduction

• Depression is a common and serious mental illness [1, 3, 4].
• Important part of some therapies: patient log their activities, emotions and mood with an activity diary.
• Activity Diaries useful for:
  • Accurate assessment of actual mood (memory is biased by depression).
  • Identifying positive activities.
  • Evaluating treatment.

Problem

• Diaries are currently done on a sheet of paper (see time table sheet on the right) [1].
• Highly inconvenient—specialized apps should be much better (potentials see image on right).

Question

How should an activity diary app for people with depression be designed to achieve high usability, acceptance and compliance?

Analysis

• Problems of the paper-based activity diary:
  • Space for writing an activity, emotion and intensity is too small.
  • No reminder function for hourly logging.
  • No help naming the emotion.
  • Difficult to write in public.
  • Writing in public attracts attention (feelings of shame).

Consequence

• Low motivation/compliance, i.e. low usability.

Design Iterations

1st Iteration

• One screen for logging and planning and scrolling.
• Select emotions from a list.

2nd Iteration

• Separate screens for logging and planning.
• Focus on “what” not “when”.
• Log emotions or mood.

3rd Iteration

• Text field for emotions.
• List of basic emotions as support.
• Mood selection via smileys.

4th Iteration

• Implementation with Cordova and SQLite DB for data storage.
• Sharing stored entries via email (can be imported in Excel).

5th Iteration

• Added iOS version.
• Reminder function.
• Time-stamps.
• Name: “Dacemo”
• Duration of an activity.
• Multiple emotions can be logged.

6th Iteration

• Improved reminders.
• Time intervals.
• Export changed to JSON.
• Developed an app for therapists.

Discussion of the Development Process

Patient Perspective

Therapist Perspective

I want to effortlessly select the emotion from a list by clicking on it.

I need an edit function in case I makes a mistake when entering data.

Patient have to reflect on their emotions, so they must write down their emotions manually.

Patients might be influenced by their depressed mood and later change their correctly logged emotions.

Conclusion

• Activity diary for people with depression was developed.
• App was well received by the patients.
• Patients continued to use it even after the evaluation was finished.
• Different requirements of patients and therapists show the need for a human-centered development.
• More effort must be invested in finding solutions that satisfy both perspectives.

Future developments/work of the mobile app could include:

• Dual-perspective solutions:
  • Mindfulness-inspired entry combined with version history.
  • Selective export of entries.
  • Capturing of photos and audio.
  • Data entry via smartwatch.
  • Localization in different languages.
  • Archiving of past entries.
  • Extensive evaluation/RCT.

References


More information at

Authors at the Conference

Poster as PDF

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