Ecological Momentary Assessment (EMA) App

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Project Goals

- Use wearable technology (Apple Watch) to identify individualized activity levels in people who have difficulty delivering accurate self-reports to their clinical team
- Use mobile and wearable technology (iPhone, Apple Watch) to deliver EMA surveys based on activity levels

The iPhone app presents appropriate options to the user

The accelerometer in the watch is used to classify both activity and inactivity using a vector magnitude based algorithm

After a change in state, the watch notifies the user that they can respond to a survey.
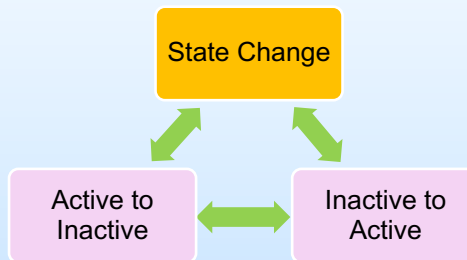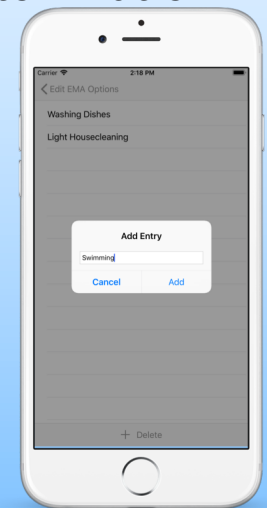
Features

- Modern IoT implementation of EMAs
- Sampling bias and user recall errors are reduced
- Presentation of EMA options are pertinent to user's state
- Response options are customizable for older adults or low-mobility users
- Surveys are triggered by real life events
- Convenient storage and collection of survey responses for further analyzation
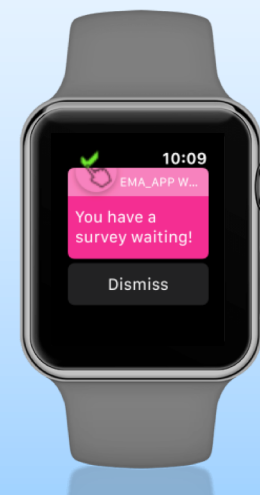
Clinician Customization

Clinicians can add survey options that are individualized for each patient. If the patient reports that they go swimming, the clinician can add swimming to the patient's activity survey.
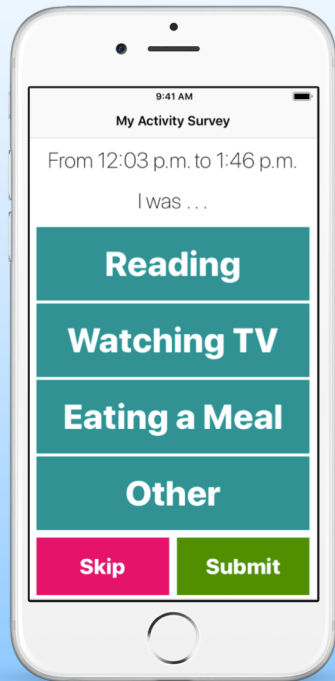
Survey responses can be retrieved from the app on the phone so the clinician can compare results and analyze activity data by time, date and duration.

Additional Support

Livewell.developer@gmail.com

Next Steps

- Test activity and inactivity tracking on a wide range of subjects to adjust sensitivity of motion detection
- Further app development
- Clinical research study with clinician/patient pairs

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