



KeepCalm App Development:

Emotion Regulation in Children on the Autism
Spectrum



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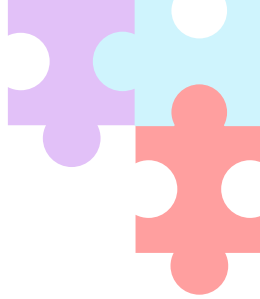
Lessons



01


Background and Significance

- Children with Autism Spectrum Disorder (ASD) often have difficulty expressing emotion
- Teachers have to multi-task
- Individualized data analysis is time consuming



A decorative border at the top of the slide consists of several interlocking puzzle pieces in light blue, yellow, red, and purple. One single light blue puzzle piece is also floating in the upper right area.

How does KeepCalm address these limitations?

1. Heart rate monitoring can help to communicate stress
 2. Top Emotion Regulation Strategies appear as pop-up notifications
 3. The app tracks the data for you!
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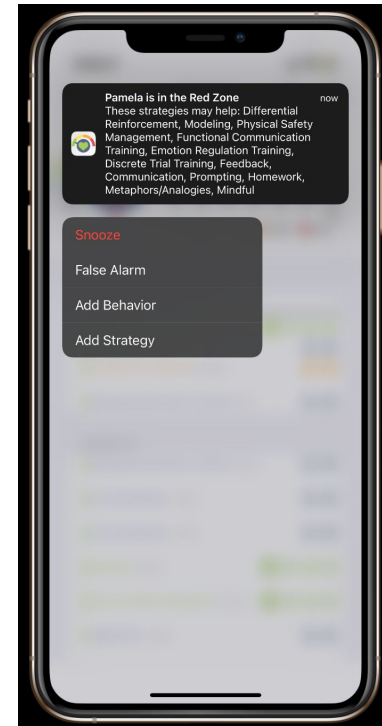
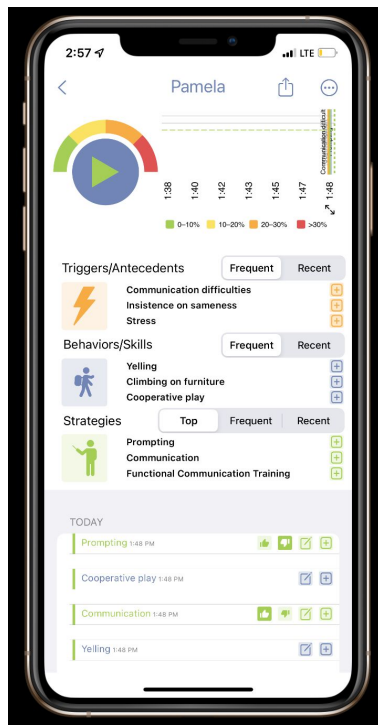
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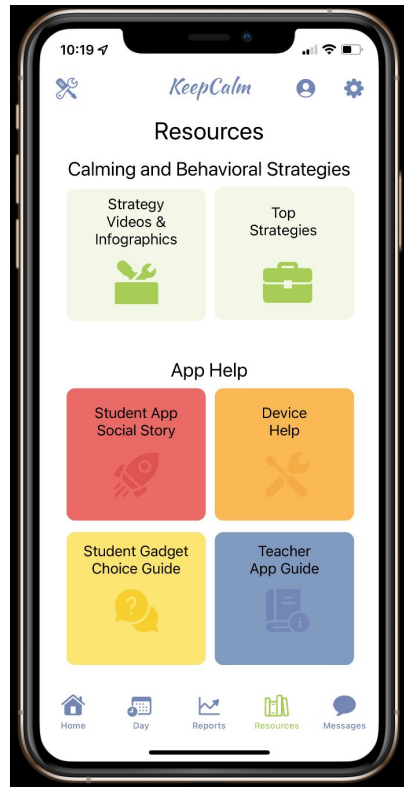
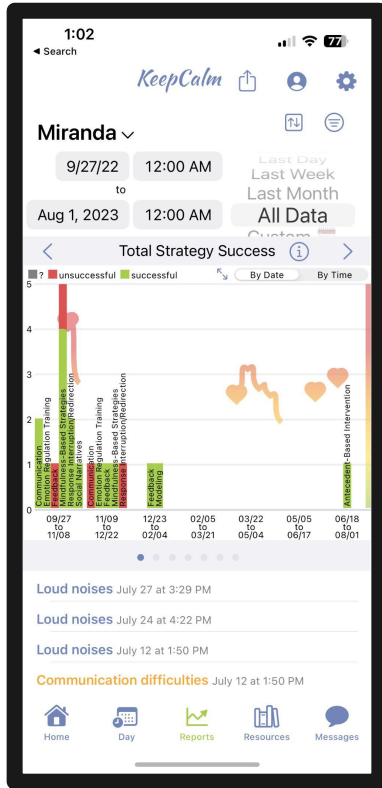
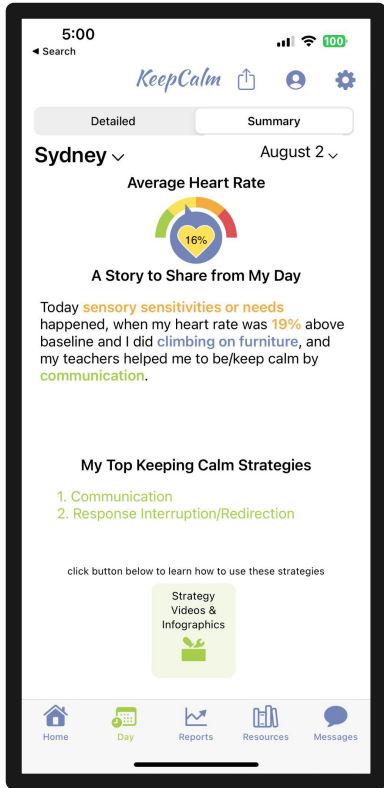
Overview

- KeepCalm is a mobile app including data collection and analysis, plus learning resource features
- Integrated with a wearable heart rate tracking bracelet which alerts teams of heightened stress
- Provides evidence-based strategies for de-escalating stress
- Funded by the National Institutes of Mental Health and designed for educational teams of preschool and elementary school students with ASD

02

Overview





Timeline

Cycle 1

Cycle 2

Cycle 3

Cycle 4

Cycle 5

RCT

1

2

3

4

5



6

Nov
2020

May
2021

Sept
2022

Jan
2023

May
2023

Sept
2023



02

Aims- Looking Ahead

Preparing for a randomized control trial by ensuring:

01

The data is representative, accessible, digestible.

02

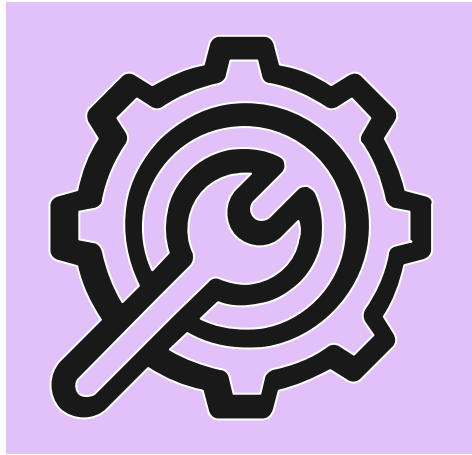
The app is useable in intended settings.

03

The app is responsive to the communities needs.



03 Methods

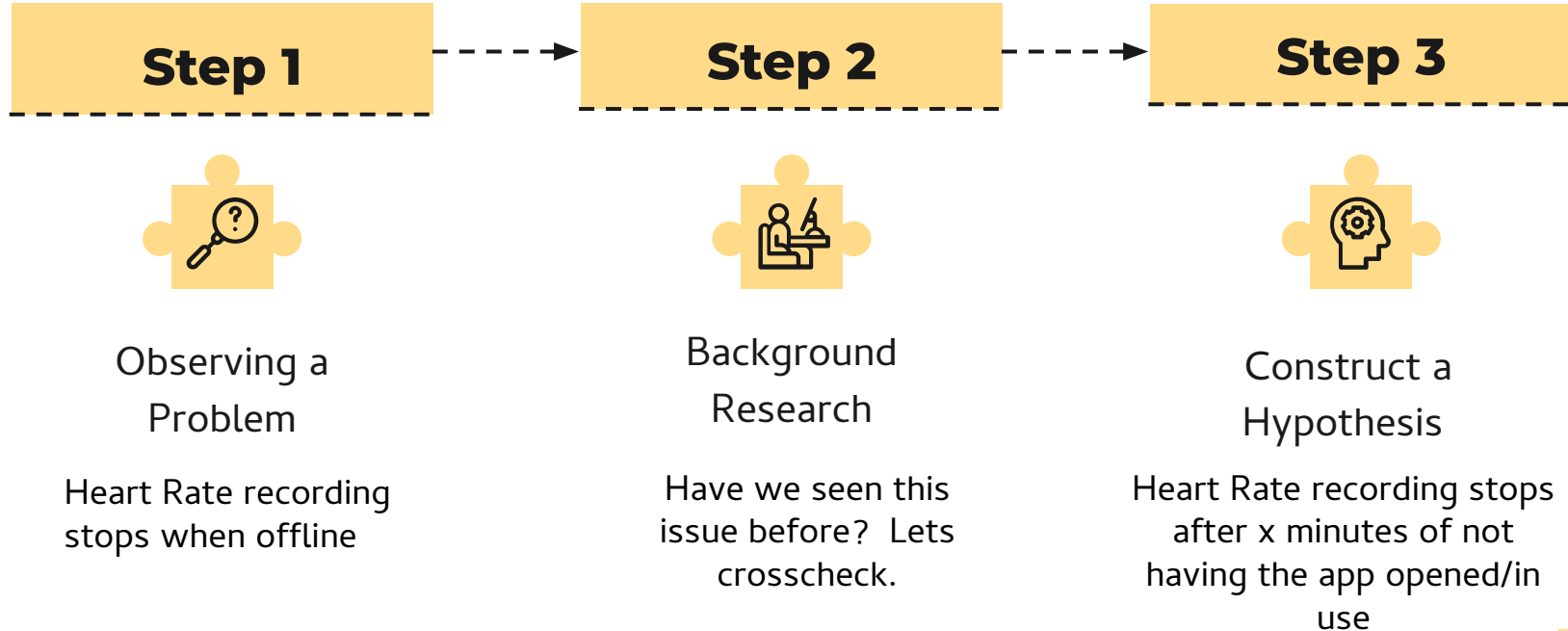


App Testing



Interview
Feedback Analysis

App Testing: The Scientific Method In Action



App Testing: The Scientific Method In Action

Step 4



Test with an experiment

Record heart rate while offline/ using other apps; observe additional measures while testing

Step 5



Analyze Data

Is the amount of time that app records in background consistent each time? If it records for different durations, why could that be?

Step 6



Draw Conclusions

Heart Rate recording stops after y minutes of not having the app opened/in use

Interview Feedback Analysis

After using the KeepCalm App for a week, teachers and parents were interviewed over zoom to hear their feedback



Cycle 5 Success

Appropriateness

4/5

Participants strongly agreed that the app was a good match

Acceptability

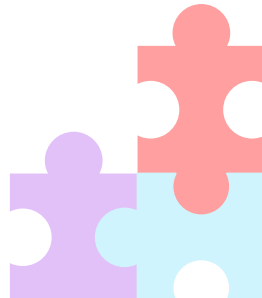
100%

Participants rated the statement “I think that I would like to use this app frequently” a 5

Feasibility


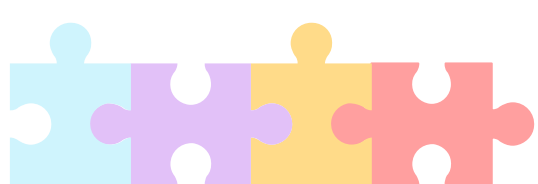

4.6/5

Average Rating of Participants to the statement “the app is doable”





Lessons Learned

1. Research can come in many different forms
 2. Community partnerships are important in research engagement
 3. The validity of the scientific method
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- 
- 



Thanks!

Questions or Comments?



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