A Community Mixed Implementation-Effectiveness Trial of an App to Support Emotional Regulation

Regulating feelings is hard for kids because the world demands a lot from their growing brains and bodies.



Physiological signals, like heart rate, can help us notice when a child is having "big feelings". Smartwatches make it possible to track these signals in children's daily lives.

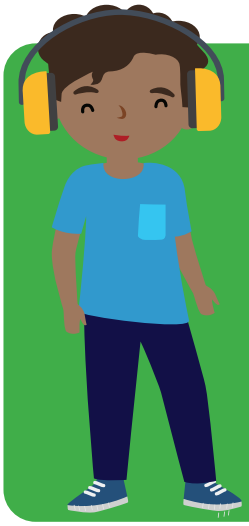


We developed an app that uses heart rate data from a smartwatch to estimate children's arousal levels and delivers feedback to families.



We examined if families could easily set up and use the app (**usability**) and if it was compatible with their daily lives (**adoption and appropriateness**).

We also examined if the app helped caregivers understand their child's big feelings.



- 126 child–caregiver pairs participated.
- Children were 5–19 years old and experienced caregiver-reported difficulties regulating their feelings.
- Children had diverse abilities, strengths, and needs.
- We used a mixed implementation-effectiveness design within the community.



1. Caregivers filled out baseline questionnaires about the child's background, neurodevelopmental features, mental health, and functioning.
2. Families used the app as often as they wanted over a three-week period. The app recorded how often they used it and when.
3. After three weeks, children and caregivers shared their experience using the app, and caregivers filled out follow-up questionnaires about the child.

The app was usable and appropriate across a wide range of ages, diagnoses, environments, and family backgrounds.

easy to set up

83%

Caregivers found the watch easy to set up and use.



comfortable to wear

93%

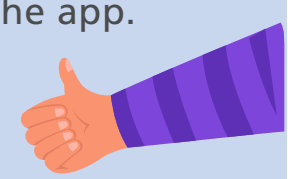


Children with different sensory profiles found the watch comfortable and would continue to wear it.

acceptance

97%

Caregivers said family members were supportive of using the app.



On average, children wore the watch for 7.7 hours a day



Families used the app in a variety of environments, most often at...

- HOME 93%
- SCHOOL 71%
- RUNNING ERRANDS 71%

Caregivers used the app to understand their child's emotional patterns and facilitate discussions about feelings.

Although preliminary data suggest that use of the app supported children's emotional functioning and quality of life at school, a randomized control trial is needed to confirm these benefits.



Infographics developed with support from Evidence to Care