Applying the EPIS Framework to Adapt and Implement a Meditation App For Justice-Involved Youth

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Introduction

Background

- Although arrest rates for youth in the U.S. have declined over recent years, the criminalization of young people continues at high rates due in large part to systemic race-based inequities (e.g., Abrams et al., 2021).

- Relative to peers outside the justice system, justice-involved youth may on average engage in higher rates of substance use, sexual activity, and aggression (e.g., Donenberg et al., 2018; Teplin et al., 2005).

- Experiences of emotion dysregulation may be a common mechanism underlying substance use, sexual activity, and aggression (e.g., Berking & Wupperman, 2012; Brown et al., 2012).

- Meditation has been associated with improvements in emotion regulation, and can be effectively delivered by smartphone app (e.g., Goldberg et al., 2020; Roemer et al., 2015).

- Most existing evidence-based interventions for justice-involved youth have focused on youth who have been placed in detention (e.g., Murray et al., 2018; Simpson et al., 2018), but the large majority of young people are placed on probation following arrest rather than detained (OJJPD, 2019), illustrating a need for the successful implementation of evidence-based programming with young people who have been placed on probation.

- The Exploration and Preparation phases of the EPIS (Exploration Preparation Implementation Sustainment) Framework provide guidelines for effectively adapting and implementing interventions with specific groups and in new settings (Aarons et al., 2011); EPIS was selected for the present study because of its dual focus on implementation determinants and processes.

Objective

- To collaborate with community stakeholders and apply the Exploration and Preparation phases of EPIS to guide the adaptation and implementation of an existing meditation app for relevance to young people who have been placed on probation.

Method

Design

- **Exploration Phase:** A literature review was conducted and stakeholders were consulted to identify key health needs among youth put on probation, and the Bodhi meditation app as a relevant intervention.

- **Preparation Phase:** An iterative series of interviews with justice-involved youth were completed to identify barriers and facilitators to delivering the Bodhi app to youth put on probation, implementation strategies, and app adaptation targets. These data were supplemented by ongoing informal input from stakeholders.

Setting

- The study was conducted in collaboration with the Chicago Cook County Juvenile Justice System and Central States SER.

Participants

- **Formal qualitative data** were collected from justice-involved youth (n = 10) 13-17 years old of all genders who had access to an Apple or Android smartphone.

- **Stakeholder input** was collected via ongoing meetings with a Youth Advisory Board, meditation experts, juvenile justice officers, community health workers, and professional app programmers.

Study Intervention

- **The Bodhi app** was developed by experts to teach evidence-based mindfulness meditation techniques over a 30-day "path" of brief audio-guided daily practices, and a menu of meditations "to go" to prepare users for particular events. Videos are interspersed to explain concepts and promote use.

Outcomes

- **Exploration Phase:** Identification of key health needs among youth placed on probation and Bodhi as an intervention.

- **Preparation Phase:** Formation of stakeholder partnerships; identification of implementation determinants; identification of corresponding implementation strategies and app adaptation targets; completion of an adapted version of the Bodhi app; and development of an implementation plan.

Results

Exploration Phase

- The **literature review and stakeholder input** identified key health needs among youth placed on probation in the areas of substance use (particularly cannabis and alcohol), sexual activity, and aggression.

Preparation Phase

- **Descriptive Statistics (self-reported):** Participants identified as 90% male and 10% female, 70% Black and 30% Latinx, with a mean age of 16.20 years (SD = 1.03). 80% and 20% reported having ever used cannabis and alcohol, respectively; 40% having ever had sex; and 100% having been in a physical fight.

- **Formal qualitative analyses** of the interview data conducted in MAXQDA, supplemented by the stakeholder input, identified barriers and facilitators of implementing the Bodhi app with youth placed on probation, and corresponding implementation strategies and adaptation targets (Table 1). This information was used to adapt the Bodhi app (Figure 1) and develop a plan for its implementation in the Chicago Cook County Juvenile Justice System.

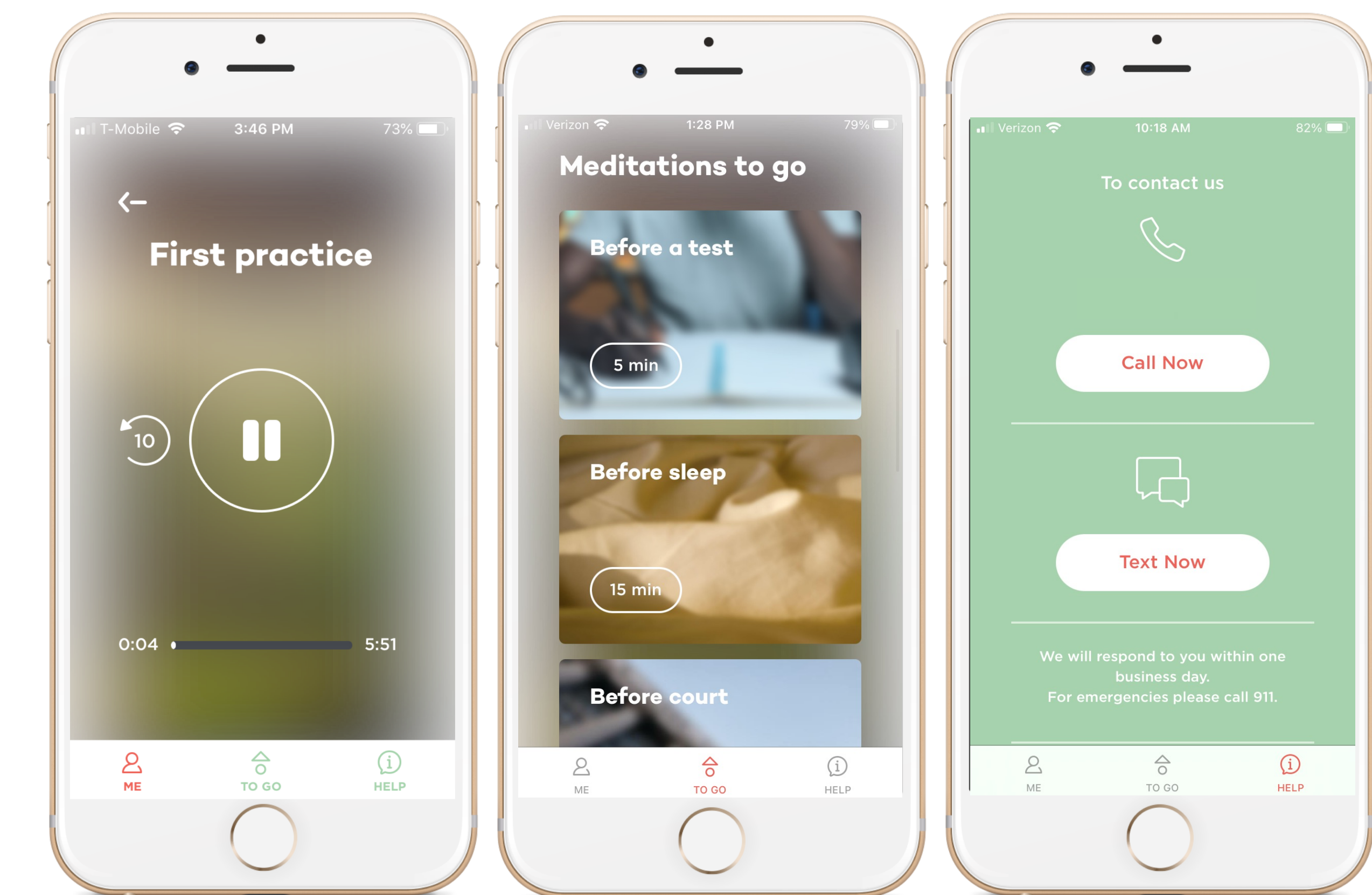
Figure 1. Screenshots of the Adapted Bodhi App

Table 1. Summary of the Primary Determinants of Implementing the Bodhi App with Youth Placed on Probation and Corresponding Implementation Strategies and App Adaptation Targets

Barrier (B) or Facilitator (F)	Implementation Strategy/App Adaptation Target
Acceptability/Usability	
Youth found meditation examples unrelatable (B)	Re-write meditations to feature relevant examples (e.g., staying mindful at a party rather than an airport)
Youth found meditation guide unrelatable (B)	Re-record meditations with a guide perceived as relatable and trustworthy (i.e., younger, Black, male)
Meditation could be mentally "destabilizing" (B)	Add tips throughout app for managing any discomfort and a help page for additional support
Youth concerned about data tracking via app (B)	Program app to limit data collection (e.g., no geolocation); emphasize these limits up front to youth
Youth found Bodhi app highly usable (F)	Retain simplicity of layout when modifying and adding features
Feasibility	
Youth often use multiple phones over time (B)	Develop procedures to easily re-download app across devices while retaining data integrity
Youth may run out of phone data or battery (B)	Compensate for data usage; compress app files; set phone to go to sleep at conclusion of meditations
Engagement likely to deteriorate over time (B)	Develop adaptive design to identify and engage non-users (e.g., via text/call) based on analytics data
Appropriateness	
Youth enthusiastic about learning to meditate (F)	Include videos of people youth find inspiring describing benefits of meditation in their own lives
Adoption	
Probation officers want to be actively involved in the implementation process (F)	Develop system for officers to text app link to youth on their caseload while minimizing coercion; hold meetings with officers throughout the development of the implementation plan and its execution
Sustainability	
Treatment gains may deteriorate over time (B)	Make app available after end of 30-day program; send monthly texts encouraging ongoing use

Implications & Future Directions

- By collaborating with community stakeholders and applying the EPIS framework, this study generated considerations for adapting and implementing mHealth programs for youth who may commonly experience barriers to participating in these programs more broadly.

- Future directions include: (1) Running a longitudinal RCT to test the efficacy of the adapted Bodhi app with youth placed on probation. (2) Adapting the Bodhi app for juvenile justice officers as a tool for officers to learn meditation themselves and support the youth within their caseloads in meditating.