

# Co-Development of Minder: A Comprehensive Mental Health and Substance Use Application for University Students

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## Introduction

- E-interventions offer the potential to address and provide prevention and early intervention for a variety of mental health and substance use issues in a low-cost, scalable manner; however, many e-tools fail to engage and retain users [1,2,3,4]
- Co-developing interventions has been previously suggested as a way to improve adherence and better meet the needs of the targeted population [5].
- E-mental health interventions developed for common mental health concerns have shown effectiveness in treatment and prevention in the past [6]. These are scalable [7] and offer an opportunity to provide holistic care that can go beyond mental health by bridging existing health and community services.

## Objective

To develop a mental health and substance use app that addresses the needs of Canadian university students.

## Methods

- A team of 21 student staff and 23 volunteers have been involved in the development of the Minder app. Their roles have included leading content development, assisting in study design, working with UI/UX developers, and engaging student stakeholders.
- A Student Advisory Committee (SAC) made up of students involved in mental health or substance use at UBC was established to provide input throughout the development process. To date, 5 SAC meetings have been conducted which have included representation from 26 different students.
- A virtual bootcamp was conducted with 40 participants to gain user feedback on key components of the app, including chatbot intervention content, Services, and the e-Coaching components. Participants navigated through components of the app and completed a feedback survey.
- A pilot feasibility study was conducted with 101 participants (69 INT, 32 CON). Study processes were evaluated and participants provided feedback on their experience.

## Results

The Minder app has been co-developed through an iterative process, during which improvements to the overall concept and design were made based on feedback from students.

### Key improvements made through student engagement:

Feedback from students → Implemented changes

#### Student Advisory Committee

- Help students to navigate the existing mental health services → Developed the Services component
- Help students form social connections and feel connected to the university → Developed the Community component
- Tailor the app to address differences in student experience (e.g., graduate vs. undergraduate students) → Adapted app components and content

#### Virtual Bootcamp

- Improving how chatbot intervention content is delivered → Reduced length of content, increased variation in responses, removed overly empathetic language
- Improving the appearance of the app so it is more professional and appealing to students → Redesigned the entire app UI/UX

#### Pilot Feasibility Study

- Reducing barriers to accessing e-Coaching in order to increase engagement → Providing all users with an e-coach immediately after enrollment, adding introductions, allowing flexibility in scheduling, clearly explaining the service
- Clarifying how to navigate and use of all components of the app → Created a tutorial video to clearly explain how to use each of the functions of the app



The Minder app consists of 4 main components: Intervention, Services, Community, and e-Coaching.

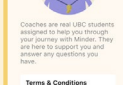
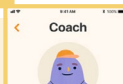


#### Services

A short survey that matches users with resources across several categories (mental health, substance use, abuse, education, sexual wellness, finances) based on current needs and preferences.

#### E-Coaching

Trained student volunteers which are assigned to help each user to help navigate the app or provide peer support sessions. E-coaching is delivered through in-app texting or video sessions.



#### Intervention

An automated chatbot and videos that delivers 34 different activities based on CBT, Metacognitive Training, DBT, Mindfulness, and Psychoeducation.

Topics include managing emotions, learning about alcohol, cannabis, opioids, & stimulants, and general wellbeing.



#### Community

Learn about clubs to connect with others on campus.

Groups  
My Favourite Groups (3)

#### Community

Directory of student groups or clubs at the university that can be filtered by interests.

## Discussion

- This process has allowed us to gain invaluable feedback from a variety of stakeholders and experts to develop and refine a comprehensive intervention that addresses a broad spectrum of student needs.
- It highlights the importance of considering credibility, appearance, and ease-of-use in designing e-interventions in order to improve engagement with these tools. Specifically:
  - Wording and messaging is important
  - Clearly explaining the functions available is needed for users to utilize the app as intended
  - Ensuring functionality of the app and testing is needed (minimizing glitches/bugs, minimizing log-in process, etc.)
- Using various approaches to engage stakeholders should be considered in further e-mental health research to better understand and address the needs of the population.

## Future Directions

- Focus groups will be conducted to help interpret the results of our pilot study and gain insight into how we can improve the Minder app further.
- We are preparing to launch a Randomized Controlled Trial (RCT) with around 1500 UBC students to test the efficacy of the Minder app.
- We are in the process of adapting the existing Minder app to better meet the needs of key sub-populations, including LGBTQ2S+, Indigenous students, and racialized students. We will also be adapting the app for other Canadian university sites.

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