

“Monday Feels Like Friday!” - Towards Overcoming Anxiety and Stress of Autistic Young Adults during Times of Isolation



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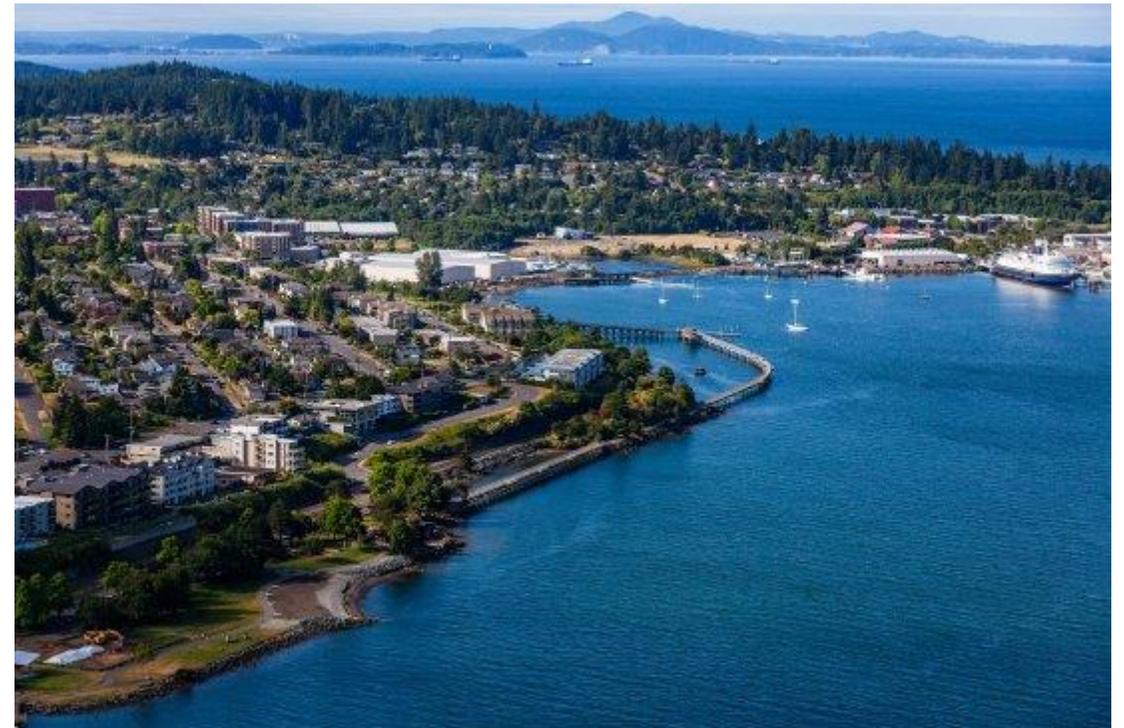
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What Is Autism?



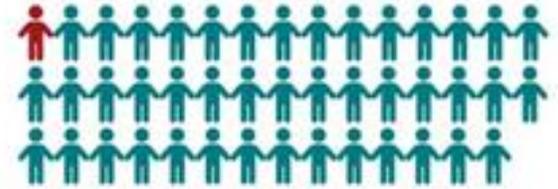
Autism, also known as autism spectrum disorder or ASD, is a developmental condition that leads to communication, social, and behavioral challenges.

Source: verywellmind.com

AUTISM QUICK STATS



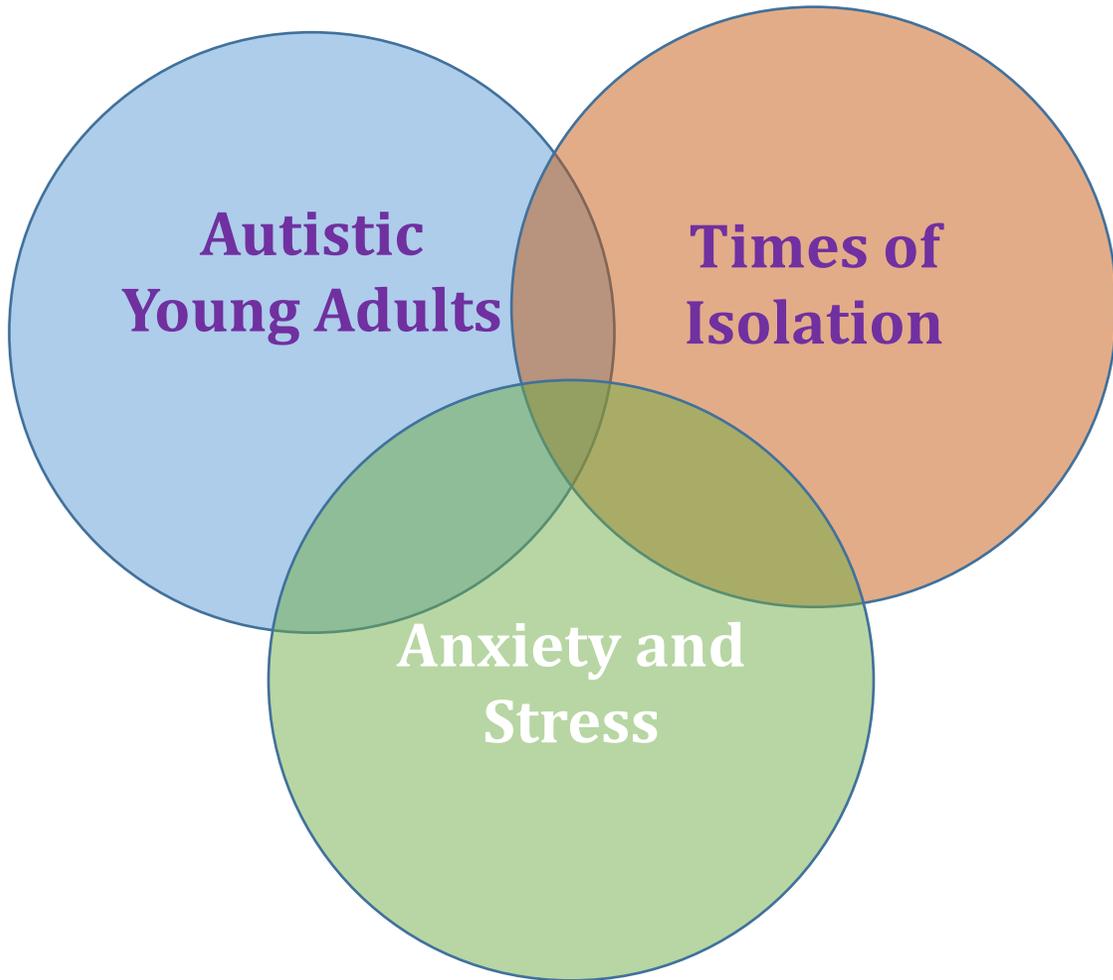
1 in **44** kids identified with autism



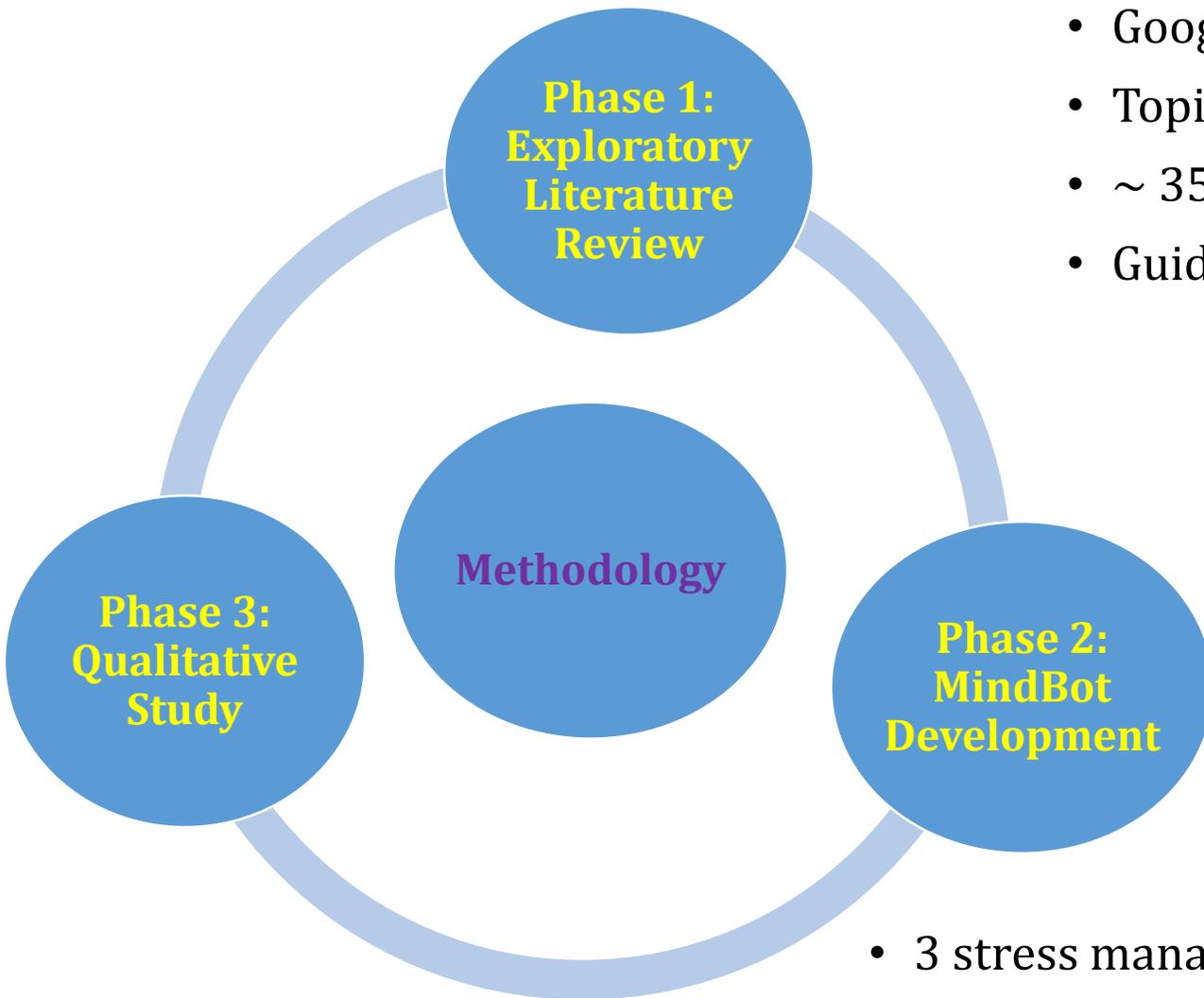
241%
higher than baseline stats in 2000

BOYS are **4X** more likely to be diagnosed than **GIRLS**

Research Objective

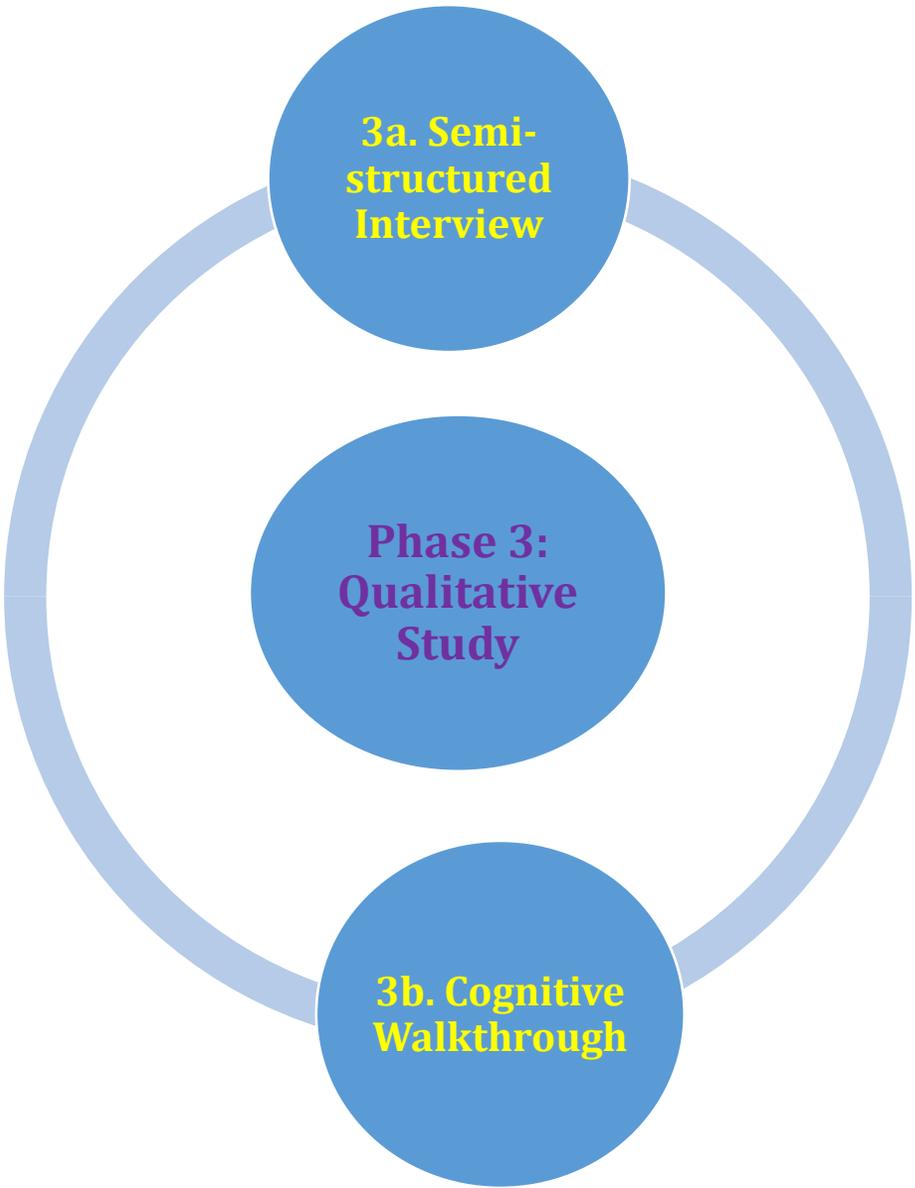


To develop participant-centric interventions for assisting autistic young adults in addressing anxiety and stress during prolonged times of isolation such as COVID-19



- Google Scholar, ACM DL, IEEE Xplore
- Topics: CBT, MBCT, chatbots in mental health, COVID-19
- ~ 35 articles
- Guided the design of the *high-fidelity prototype* of MindBot

- 3 stress management features (MBCT, AI chatbot, and Instant)
- Secondary features
- Frameworks : React Native
- Backend : Google firebase (Data hosting storage)



3a. Semi-structured Interview

**Phase 3:
Qualitative Study**

3b. Cognitive Walkthrough

- Zoom Interview
- 15 autistic young adults (self-reported)
- 20-34 years (avg = 26.3)
- M=14, F=1
- 12 questions
- Prototype Demonstration
- Lasted up to 90 mins
- Qualitative coding using Atlas.ti
- 48 initial codes, 7 themes identified

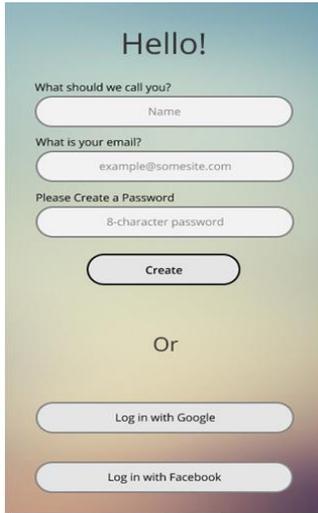
- N = 20
- Four Tasks
- After each task, participants answered four questions

Phase 1 and 2 Findings

High-Fidelity Prototype of MindBot



Loading Screen



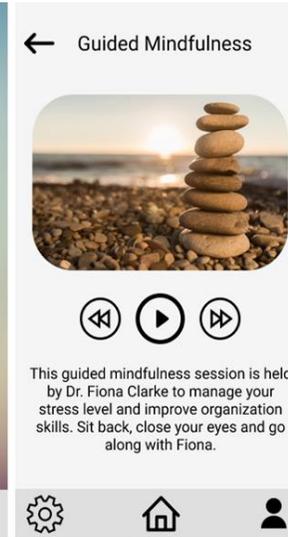
Sign in Screen



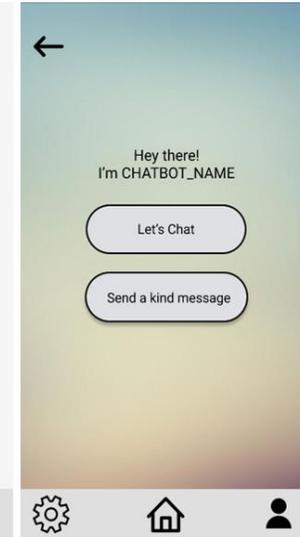
Main Menu



Mindfulness Page



Guided Mindfulness



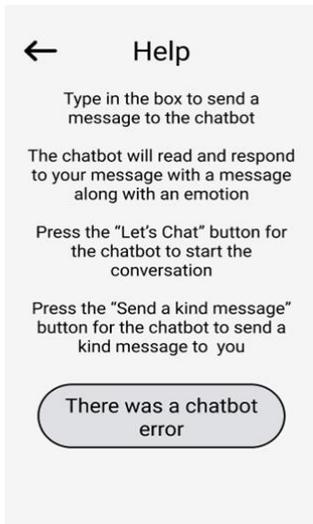
Chatbot: before screen



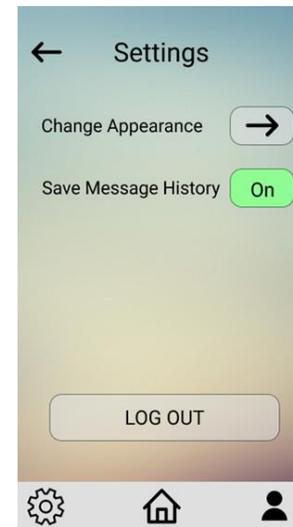
ChatBot: Let's chat



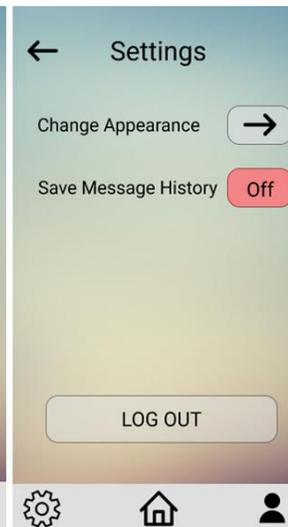
ChatBot: Kind message



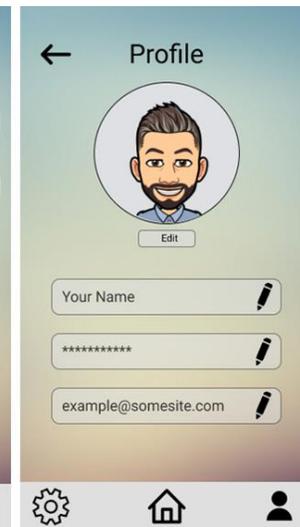
ChatBot: Report Error



Settings Page



Settings Page



Account Page

Phase 3a Findings

Semi-Structured Interview

Drastic Times (COVID-19) Result in Drastic Measures

Nowadays, Monday feels like Friday!..
[It] feels like the loop. And it feels like I'll
never get out of the pandemic. (P3, 21 y)



I almost feel like I should die... I should commit suicide.
(P8, 32 y)
I could not really sleep at night. So, I had to take drugs...
to sleep. (P11, 25 y)



I actually lost one of my best friends from I guess
lack of engagement. We used to drive to college
every day. Once it became clear that we can't
hangout everyday, it just kinda fizzled out. (P1, 24 y)



Mental Health: Coping Strategies

The reason I like horror movies is the kind of tension that you have when watching the movie, so that's the most enjoyable part of watching horror movies for me! (P2, 21 y)



I can recoup my mental situation with mobile apps. (P10, 26 y)

If I could have an application or technology that can detect my stress, and tell me, I'm driving too much, I should relax myself. That will be very, very lucrative for me. (P8, 32 y)



I like [to] meditate often, that helps me relax. That's very good for stress, just like 20-minute meditation." (P3, 21 y)



MindBot: What Our Participants Think

For this one, I will give it 100% and say, Bravo! (P2, 21 y)

I love everything about the app. It's fun. (P7, 34 y)

According to what I'm seeing it, it's very, very perfect. I like it. (P14, 29 y)



I feel like if it [chatbot] replies right away, right when I say something, it would almost be a little less genuine. (P1, 24 y)

It will be cool to have the option of saving specific messages. (P3, 21 y)

Phase 3b Findings

Cognitive Walkthrough

Task 1: Log in by creating an account

Task 2: Prompt chatbot to start a conversation

Task 3: Respond to chatbot with emotion

Task 4: Log out

Q1: Did you achieve right outcome?

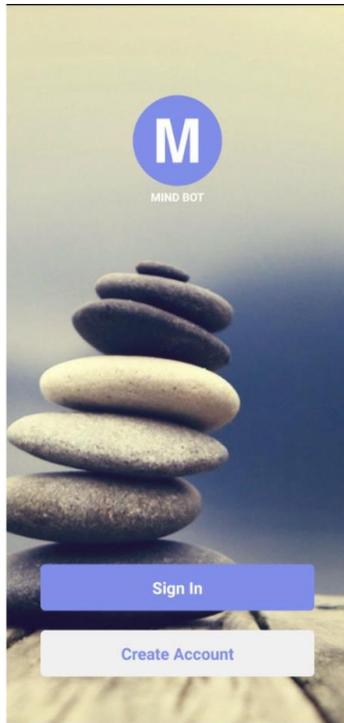
Q2: Did you notice that the correct action is available?

Q3: Did you associate correct action with expected outcome?

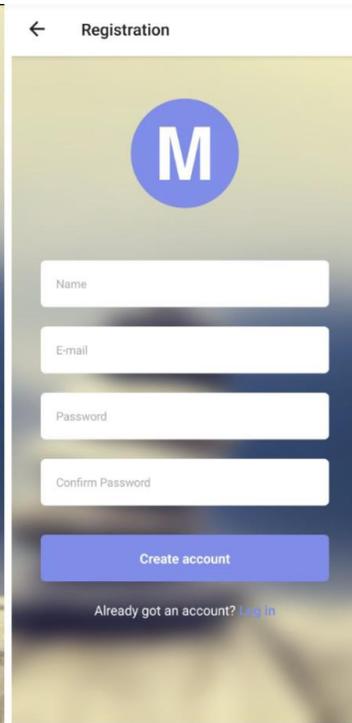
Q4: If correct action was performed, did you see progress was being made towards intended outcome?

Task #	Question #	# Of Successful Participants
Task 1	Q1	20 (100%)
	Q2	20 (100%)
	Q3	19 (95%)
	Q4	19 (95%)
Task 2	Q1	19 (95%)
	Q2	19 (95%)
	Q3	20 (100%)
	Q4	20 (100%)
Task 3	Q1	18 (90%)
	Q2	11 (55%)
	Q3	12 (60%)
	Q4	12 (60%)
Task 4	Q1	19 (95%)
	Q2	19 (95%)
	Q3	19 (95%)
	Q4	18 (90%)

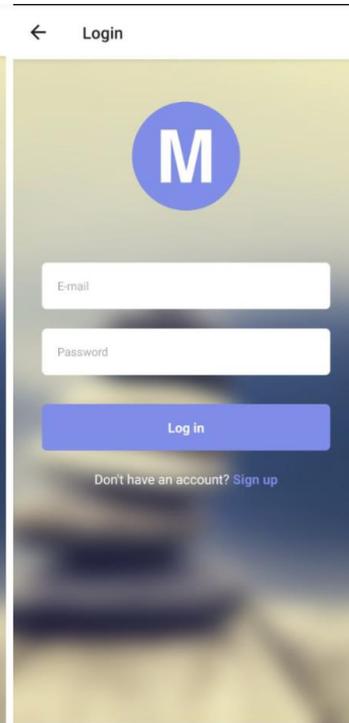
Current Status and Future Work



Start Screen



Registration Screen



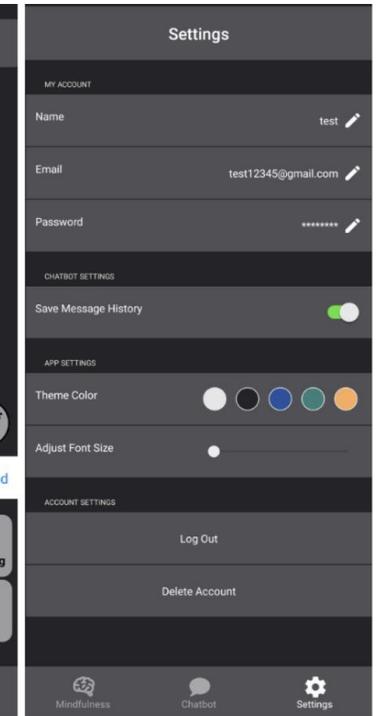
Sign in Screen



Home Screen

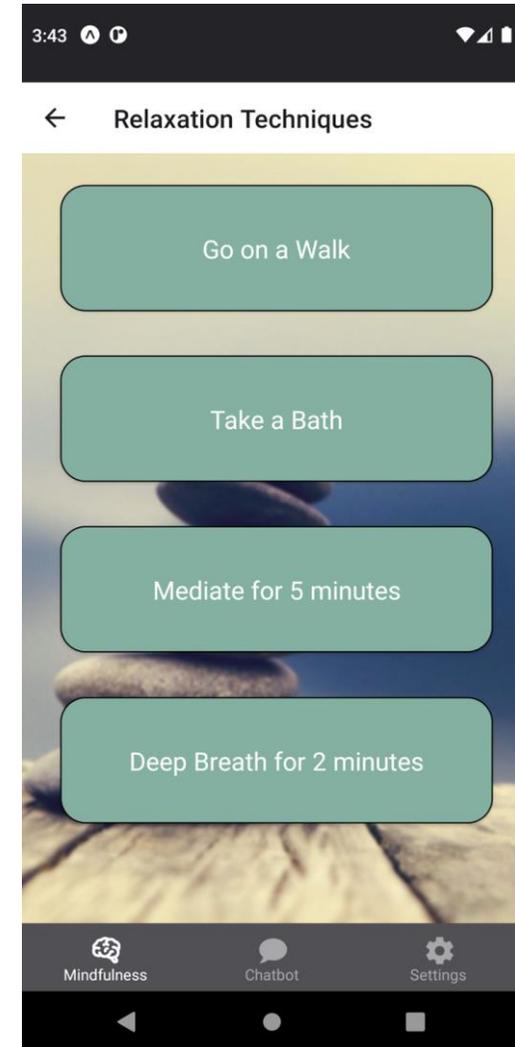
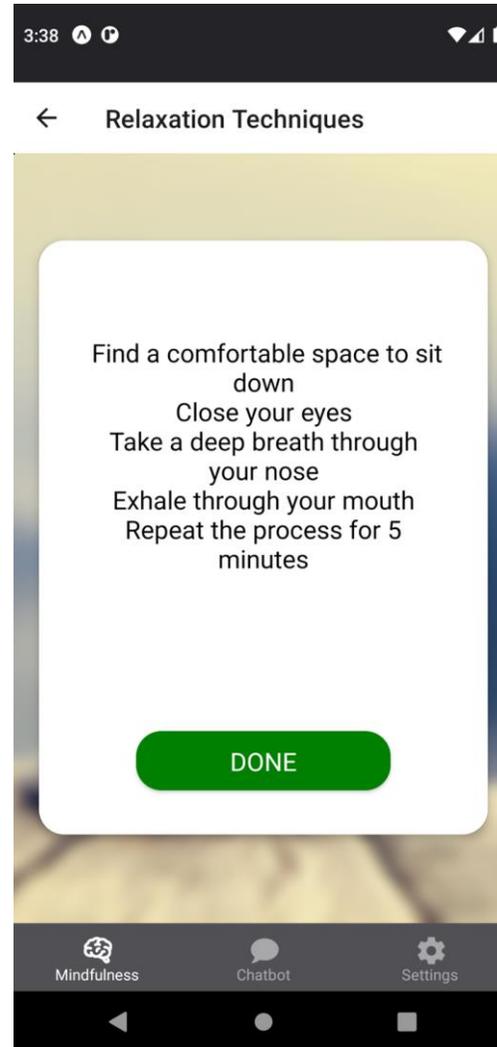
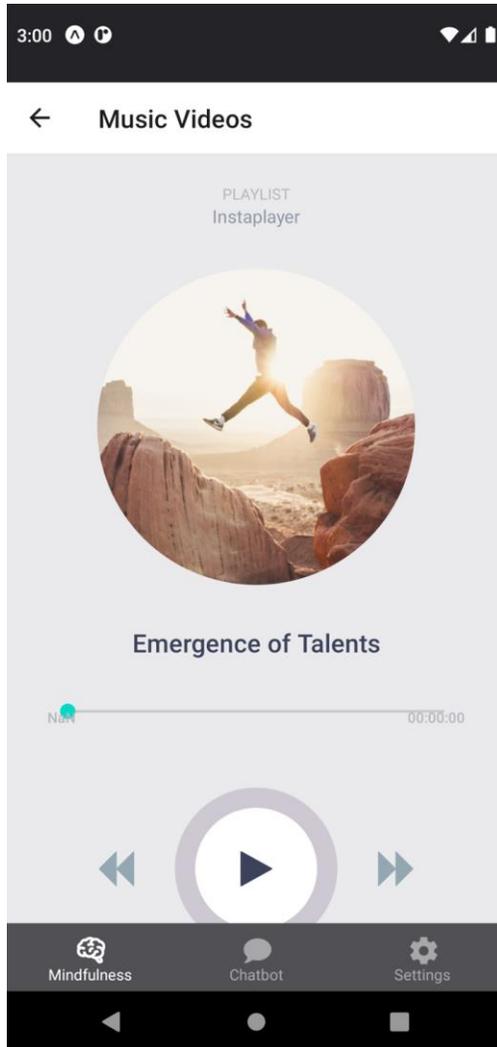


ChatBot

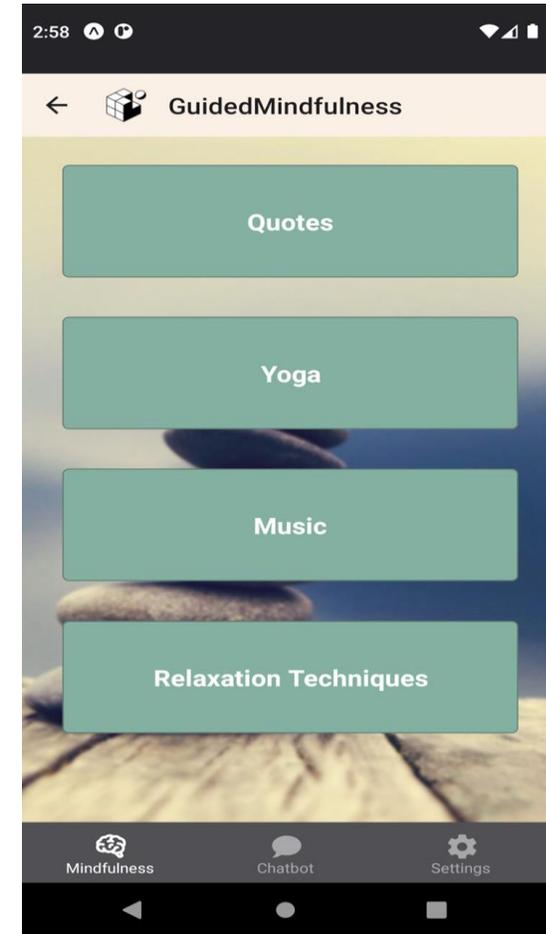
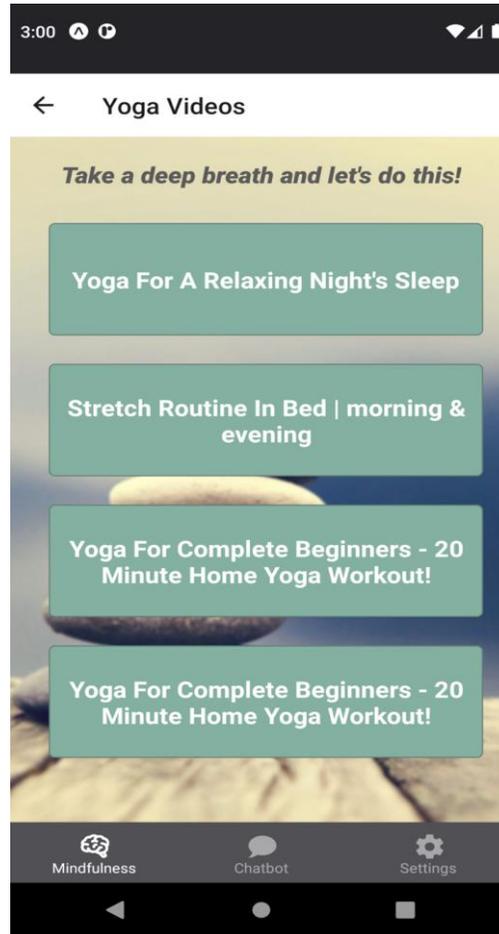


Setting

Current Status and Future Work



Current Status and Future Work



Take-Way Messages

- Like neurotypical individuals, autistic individuals
 - Took some drastic measures during COVID-19
 - Urgently need mental health support
- MindBot like technology may help to provide mental health support
 - Not many therapists are available
 - Costly
- Design Implications
 - Mental Health Resources & Education
 - Social Aspect
 - Stress Management Guide



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