Project Kikii

Executive summary

According to the National Institute of Mental Health, approximately 44.7 million adults in the U.S. or 18.3% of the total American adult population, were estimated to have had a mental illness in 2016. In addition, "fully 20 percent - 1 in 5 - of children ages 13-18 currently have and/or previously had a seriously debilitating mental disorder. By comparison, 8.3 percent of children under age 18 have asthma and 0.2 percent have diabetes." However, in 2016, only 43.1% of adults with any mental illness received treatment, and, according to the National Center for Children in Poverty, "75% to 80% of children and youth in need of mental health services do not receive them."

In order to bridge this gap, and provide some assistance to those suffering from symptoms of mental illness, I would like to build Kikii, an animated chatbot that records guided, journal-like entries from user input, analyzes and displays trends the user's moods by using sentiment analysis, and enables the user to quickly share information with their therapist, caseworker, or other mental health professional. In addition, Kikii would also suggest activities or habits that are known to improve one's mental state, check in on the user regularly via SMS, and enable one's chosen mental health professional to input custom treatment plans and chat prompts. Furthermore, Kikii would offer both voice-to-voice and text-to-text communication, in an effort to increase engagement, particularly among children & adolescents.

Kikii is inspired by two previous hackathon projects, Roobi and Codee, and, consequently, has many similarities to those projects. In addition, a few chatbot & AI friend applications, like Replika, already exist, as do several journaling apps, numerous mental health websites, and numerous self-tracking and goal-setting applications, like Habitica. However, the focus of each chatbot and journaling application is typically limited to the app itself, and the goal-setting applications typically lack self-reflection features. Furthermore, none of these applications are fully set up to communicate with another individual, which is one of Kikii's most significant features.

User types

- **Primary user/content-creator:** child (aged 5-12) with symptoms of depression or anxiety disorder
- **Primary user/content-creator:** adolescent (aged 13-17) with symptoms of depression or anxiety disorder
- **Primary user/content-creator:** young adult (aged 18-29) with symptoms of depression or anxiety disorder
- **Secondary user/consumer:** therapist or other mental health professional
- **Supplementary user/consumer:** emergency hotline volunteer (lowest priority)

User stories

1. A user creates an account.
2. A user logs in.
3. A primary user discusses their day with Kikii.
4. A primary user is reminded of their medication.
5. A primary user is prompted to start another conversation/journal entry.
6. A primary user shares information with a secondary user.
7. A primary user views trends and data on their previous conversations with Kikii.
8. A primary user their previous conversations with Kikii.
9. A primary user is notified of potential shifts in their behavior/mood.
10. A primary user is informed of various actions or habits that could improve their mood.
11. A primary user is informed of external mental health resources.
12. A secondary user views information on their patient.
13. A secondary user inputs custom treatment plans and conversation prompts.
14. A secondary user is notified of potentially risky behavior.
15. A secondary user inputs medication information and reminders.
16. A secondary user shares resources with their patient.

References

- https://www.nimh.nih.gov/health/statistics/mental-illness.shtml
- https://www.nimh.nih.gov/about/directors/thomas-insel/blog/2015/mental-health-awareness-month-by-the-numbers.shtml
- http://www.nccp.org/publications/pdf/text_687.pdf