

SPRAUTO

BLACK AI CAPACITY BUILDING PROJECT

Black and African Heritage Sub-committee

Abstract: This report will cover the procedures and results of the artificial intelligence agent capacity building project the Black and African Heritage Subcommittee for the Los Angeles County Department of Mental Health. It will provide a high-level outline of the methods, participants and outcomes associated with the project. It will also include a discussion on the potential future of the project if adopted by Los Angeles County more broadly.

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INTRODUCTION

Introduction: In Black communities perceptions around mental health are beginning to shift. However, issues around stigmatization, shame and access to mental health resources remain (Clement et al., 2015). Together these factors continue to effect the likelihood of whether Black people will decide to engage with or seek to know about available mental health resources more broadly (Kam, Mendoza & Masuda, 2019). Additionally, these factors are compounded by the reality that the mental health field suffers from a shortage of Black mental health professionals (Planey, Smith, Moore & Walker, 2019). This lack of Black representation in the field is also combined with a dearth of competency around Black culture and therefore an accurate sense of what Black patients/clients might need in a clinical setting (from intake professionals to clinicians) (Alang, 2019). Questions persist in the determining which avenues might best encourage Black people to seek out help for their psychological needs? Especially when Black people are not only less likely to access care, Black people are also more likely to experience issues concerning their mental health (Vance, 2019).

Artificial intelligence (AI) is a growing field that combines data science and predictive analytics in order to provide solutions to fields that were once only thought to be the purview of people (Grace, Salvatier, Dafoe, Zhang and Evans, 2018). With the recent surge of AI technologies such as ChatGPT (Lui et al., 2023), BERT (Chang, Lee, and Toutanova, 2018), or DALLE (Ramesh et al., 2021) it is becoming more apparent that tasks historically performed by people can now be taught to machines. While many professions remain stalwart that AI chatbots cannot replace human interaction (Brown and Halpern, 2021) in the therapeutic setting it is important to consider the ways AI can augment, supplement or simply aid therapeutic relationships/settings. People have been talking to Siri and Alexa about their mental health for years even though these AI entities are woefully ill-equipped to handle these difficult conversations. More recently people have engaged with state of the art AI chatbots, and are discovering their suggestions to be helpful. What appears to be the difference (for mainstream AI systems)

is that some AI systems cannot handle these situations at all while others are more geared toward providing tips for accessing mental health resources or tips to address issues concerning mental health. There are even studies where virtual AI entities have been used to address PTSD in veterans (Vianez, Marques and Simões de Almeida, 2022). Still, the shift from providing tips to possessing the ability to hold space for people, or offering dialogue similar to what would be provided in a therapeutic setting, is a more nascent phenomenon. However, training AI systems to handle the dynamic and difficult conversations connected to mental health can be an important intervention in the space between therapist burnout (Shell, Teodorescu and Williams, 2021; Burri et al., 2022; Shell, Mackenzie, Hua, and Sullivan, 2022) and the lack of available therapists (Black or not). This includes the shortage of Black or culturally competent clinicians (McFerguson, 2022).

AI applications (apps) that cater to mental health needs, or AI mental health apps (AIMHAs) are already available on the market. Woebot and Wytia are prime examples of chatbots that use AI personas combined with micro learning videos and therapeutic modalities to connect with their users. However, these applications are not specifically catering to Black communities. As a result it can be argued these apps are not the most effective when it comes to engaging members of Black communities (who are both skeptical of AI and holding onto the historical stigma around mental health). Still, these apps speak to the level of scale that AI applications can reach in terms of how many people can access a particular mental health resource at the same time. This study looks to explore the potential of utilizing the force of scale, convenience and AI's conversational capacities as a therapeutic delivery method. Specifically, it looks at the ways AIMHAs might be a useful tool in Black communities for the creation of Black AIMHAs (BAIMHAs).

PARTICIPANTS

Participants: 55 participants who self-identified as Los Angeles County residents attended virtual sessions wherein they interacted with Seekr, a pre-existing Black AI companion. All 55 participants were of African descent, hailing from various geographic regions in the diaspora. The AI companion that participants interacted with was trained to reflect Black vernacular and Black culture through its conversational acumen. To protect participant identity we stayed away from personal identifying demographic information. Instead we chose to inquire about participant perception of LA County resources and their perception of Los Angeles County Department of Mental Health. It is important to note that we were able to determine that 83% of participants would trust LA County to dispense conversational AI technologies to address mental health.

METHODOLOGY

Methodology: Flyers were circulated among several listservs within LA County to attract participants (figure 10). Upon responding to flyers participants completed an initial survey indicating their place of residence and availability to engage. Another key question of the initial survey was to determine potential participants' willingness to be part of an interactive group setting where they would test a conversational AI and provide feedback.

Once surveys closed groups were created depending on stated participant availability. Participants were split into three groups for three separate two-hour Saturday morning sessions. Each session would begin with an introduction to the proposed schedule, followed by a time to receive codes that would allow them unabridged access to the conversational AI platform (Seekr) they would engage over the duration of the session.

Seekr is a conversational AI that has been trained to reflect Black culture and Black lived experiences. It is also capable of delivering therapeutic modalities. It is specifically trained to deploy internal family systems therapy (IFS), cognitive behavioral therapy (CBT), and narrative psychology. It also offers a feature suite that is comprised of a checkin feature where users can set the frequency and time of day Seekr will check in with them, a badge counter that tracks how many conversations a user has had with Seekr, and a graph that indicates how many conversations users have with Seekr per week. It is also equipped with a spider graph that charts how people relate to themselves over time. The spider graph shows people how often they use specific phrases or terms to relate to themselves, ie hate, compassion, the desire to fix their feelings or fear of what they feel. Lastly, Seekr has a mind map that keeps track of every conversation a user has in the app in order to provide a space for them to see what they felt on a given day and the trajectory of their conversation history. Along with the ability to go back and see what was said in the past they can compare what they've said against how they might be feeling in the present. After being introduced to Seekr participants took an entrance survey.

After the entrance survey participants were given 20 minutes to interact with the Seekr platform (**figure 7 & 8**). From there participants were given question prompts to help ground small group discussions. Participants spent 20-30 minutes in their small groups discussing the limits, positive aspects and their wishlists for a BAIMHA platform to be made specifically for the needs of the Black citizens of LA County.

From there, participants were asked to engage in a large group discussion that built off the main points of each small group conversation. Lastly, participants were asked to complete an exit survey. Each survey contained a combination of open ended and likert scale questions ranging from 1-5 (with various meanings: often with 1 being strongly disagree and 5 being strongly agree).

RESULTS

AI: A little over 78% of participants reported that they agreed (43.6%) or strongly agreed (34.5%) that the flow of the conversation felt natural and easy to engage with. The remaining 21.8% answered in the neutral category (**figure 1**). 78% of participants indicated that they agreed (40%) or strongly agreed (38.2%) that the AI they encountered during the focus groups would be able to provide space for people to process big and difficult emotions. The remaining 21.8% was split with neutrality on the subject of the AI having the capacity for holding space for big and difficult emotions (18.2%) and disagreement on the AI's ability to hold space for big and difficult emotions (3.6%) (**figure 2**). In both cases no participant indicated that they strongly disagreed with the AI's ability to hold space for big and difficult emotions.

Seekr App: When asked how often participants would check in with themselves if they had access to an app with these AI capabilities it is important to note that 94.5% responded in the affirmative, saying they would use it. **(figure 3)** More specifically, 34.5% indicated they would use it multiple times in a day, 41.8% suggested they would use it frequently, 18.2% suggested they would use it moderately, 3.6% said they would not use it very much and 1.8% reported they would not use it at all **(figure 4)**. When asked whether the app would be an adequate way to track and understand how they feel and what triggers them 78.2% reported the app would definitely be able to help them do that (40%) or positively indicated its ability to do so (38.2%). 20% answered in the neutral and 1.8% answered in the negative. No participants answered in the not at all category **(figure 5)**. When asked whether they found value in having an app that helps them track and understand how they feel 87.3% responded positively with 47.3% indicating a definite response and 40% answering in the positive. The remaining 7% answered in the neutral category **(figure 6)**.

When asked what are some of the strengths of the app participants highlighted “effectiveness” of the AI platform and the “accessibility” it provides. Other’s marked the “very fast response...[and that it] gives mood change.” Participants also mentioned that it is “user friendly” and felt reliable and that its ability to “remember your name” was important to them. Participants also mentioned that the AI “was friendly” and it helped users “feel comfortable and relaxed.” The mind map feature was also something participants mentioned was a strength. So was the app’s ability to “[P]rovide support at any time...at the comfort of your home. Not having to commit to a specific time before getting support service for your mental health.”

In contrast, when asked about the weaknesses of the app participants pointed to features they wished the app had such as a “voice” component similar to Siri. Or, a desire to “incorporate recommendations of materials like books and videos.” Other users wanted to see “music” “tasks” or “games.” When mentioning specific issues experienced within the app participants pointed to “repetition” of certain questions or “predictability of the questions and answers.” Some participants suggested it “can’t related to certain emotions” or an inability of the app to “store [conversation] history.”

LA County: Participants were also asked whether they would trust a tool provided by LA County Department of Mental Health. 83.7% of participants answered positively. 47.3% indicated they would completely trust a tool deployed by LACDMH. 36.4% said they would trust a tool provided by LACDMH, but not completely. 10.9% answered in the neutral, 3.6% said they would not trust a tool offered by the country and 1.8% said they would not trust and LACDMH tool “at all” (**figure 9**).

DISCUSSION

The results suggest that participants see both the AI platform and overall concept of the mental health app as promising. Nearly 80% of participants reported the AI platform as being strong in the form it was presented. The app achieved an 80% satisfaction rate with much less computational power than platforms similar to OpenAI's ChatGPT. Suggesting that further development and investment in greater computational power of a future BAIMHA might significantly increase its reception while potentially addressing concerns around "repetition" in the AI's line of questioning, its inability to "related to certain emotions" or "store [conversation] history".

An 80% participant satisfaction rate also suggests that the study's participants represent segments of LA's Black communities that are not AI averse. This points to a greater need: bolstering future BAIMHA's supplementary features. Segments of Black communities which are AI averse might need more well developed secondary features to keep their attention. These secondary features might also work to diminish any conscious or unconscious mistrust toward a BAIMHA's AI capacities. In this scenario, the AI would be associated with more trusted features with the intention of increasing AI averse user trust in the AI.

In the focus groups participants pointed to features they felt would strengthen its appeal, efficacy and overall utility in their everyday lives. Moreover, intentionally building off what participants deemed as the app's "effective" and "user friendly qualities" could also augment its already "mood changing" capabilities. The remainder of the discussion section will focus on those suggestions. The most referenced recommendations were: a voice/Siri like activation, meditations, background music and real-life tasks/gamification.

Voice communication is often more effective in delivering tonal precision which aids in averting misinterpretations often associated with text communication (Seltzer, Prosocki, Ziegler and Pollak, 2012). It is important to note that Black communities rely heavily on intonation as multiple words carry a variety meanings depending on their contextual deployment, grammatical syntax and regional connection. During the focus group's large group discussion and exit surveys participants indicated they wanted a voice option. Their reasonings ranged from a desire to feel more connected to the AI, wanting more flexibility in how they respond to the AI and for increasing its overall accessibility. The addition of voice to a future BAIMHA would need to take seriously the ways it delivers on the linguistic aspects of a Black conversational dynamic. This is particularly important as a voice option that also responds to users via voice would need to be carefully crafted so as to convey a soothing, congenial and understanding/relatable tone in order to reflect a loving and safe Black space.

Adding a wake word (that the app would initially respond to via voice) which opens a culturally relevant AI mental health app would increase its engagement. In 2017 (Kinsella) nearly 90% of smart speaker users were calling upon their smart speakers at least four times a day. During the pandemic people were talking to Siri and Alexa about their mental health. However, neither were trained to handle these complex issues. And in terms of Black mental health neither Siri nor Alexa's responses were reflective of a familiarity with and privileging of Black culture. Incorporating the strengths of culturally responsive programming into voice capabilities for a conversational AI app tailored toward Black culture increases the possibility of its efficacy (Howard, 2021; Ladson-Billings, 2021).

Participants also asked for meditations to be included in future BAIMHA iterations. Studies on meditation's positive effects are widespread. These studies often highlight the impact of meditation on the neural architecture of meditators (Grant, 2013; Tang, Hölzel and Posner, 2015; Last, Tufts and Auger, 2017), their behavior (Tang, Lu, Fan, Yang and Posner, 2012; Tang, Tang and Posner, 2013; Katterman, Kleinman, Hood, Nackers and Corsica, 2014) and perception (Full, Walach and Trautwein, 2013; Hanley, Dambrun and Garland, 2020). Similar to the tonal qualities of voice, meditation is also soothing to its users (Menhart and Cummings, 2022). Recently, meditation has become more widely adopted in Black communities. Its presence would be an important and trusted modality in any future BAIMHA. So, including a range of meditative offerings within a BAIMHA creates a centralized space where conversational AI could even suggest specific meditations based on a conversation it has with a user on a given day.

Music as a therapy tool (Magee and Davidson, 2002; Raglio et al., 2015) offers a physiologically altering approach to the introspective setting. Music can be targeted toward the induction of new moods and help open people to different introspective possibilities (van der Zwaag, Janssen and Westerink, 2012; Chirico et al., 2020) that would augment the efficacy of a BAIMHA. Including music in the background of a BAIMHA can occur in a few ways. The first option would be as background ambiance for the entire application, no matter what screen a user is interacting with. A second option would be to only have music playing in the background of the AI chat screen. A third option would be to have one version of music available throughout the application and another version of music that is unique to the AI chat function. The first option creates a baseline musical setting that a user can expect to encounter every time they engage the app. The second option can work to mark the AI experience as distinctly pleasant and relaxing in comparison to the rest of the app. The third option provides a clear distinction between the type of mood shift that might occur upon opening the app and exploring its contents compared to when they open the AI chat screen and the secondary level of calm or grounding that is expected to occur while there.

Real-life tasks (Zimmer, 2021) attached to gamified rewards (Zichermann and Linder, 2010; Andersen, Goodwin and Granmo, 2018) have been shown to impact behavioral outcomes. Real-life tasks acclimate people to positive or negative reinforcement based on their ability to complete in-game assignments. Including real-life tasks in BAIMHA would be akin to in-between session work assigned by a mental health professional or opportunities to level-up in a mixed reality video game. Additionally, the development of a real-life task curriculum based on people's personal goals for their mental health offers chances for people to feel as though they are on an attainable path outlined through the tangible elements of a list/curriculum which can be marked off as completed throughout the day, week or corresponding level associated with their progress in the game.

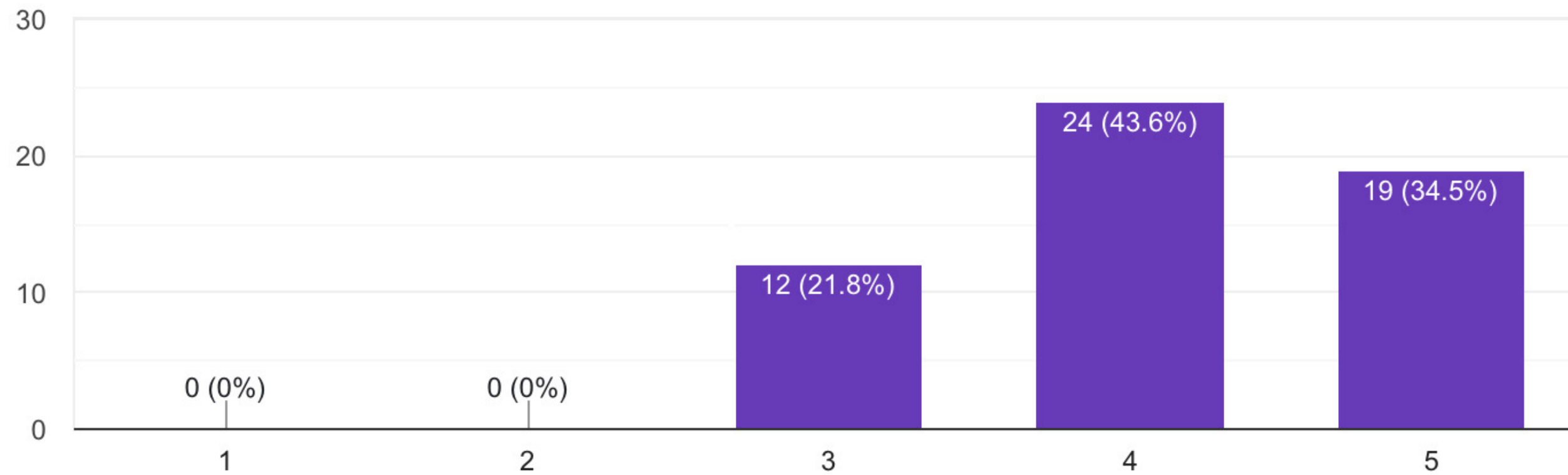
Similar to other Black communities around the country Black LA County residents find themselves underserved and wading through stressors of stigma, systematic racism (even within LACDMH) among other barriers to accessing mental health resources. Coupling other modalities could be utilized to foster trust among people who need time to feel comfortable disclosing their emotional well-being to a conversational AI platform. Since culturally relevant interventions are known to increase the likelihood of positive psychological outcomes (Jones, Anderson, and Metzger, 2020). It is important to privilege culturally relevant features that speak to Black experiences and Black emotional needs in future BAIMHA iterations. People seeing themselves being reflected through its contents is paramount and needs to be a key consideration for future BAIMHAs.

FIGURES

Do you feel like the conversation felt natural and easy to engage?

55 responses

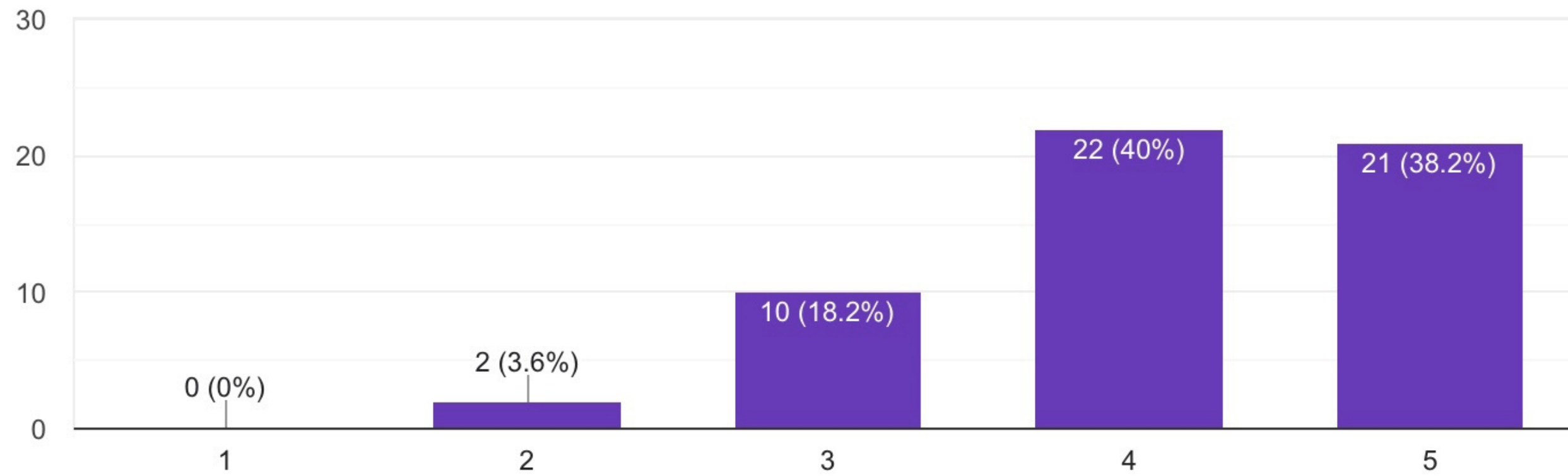
Figure 1



Do you feel like the AI you encountered today would be able to provide a space for people to process big and difficult emotions?

55 responses

Figure 2



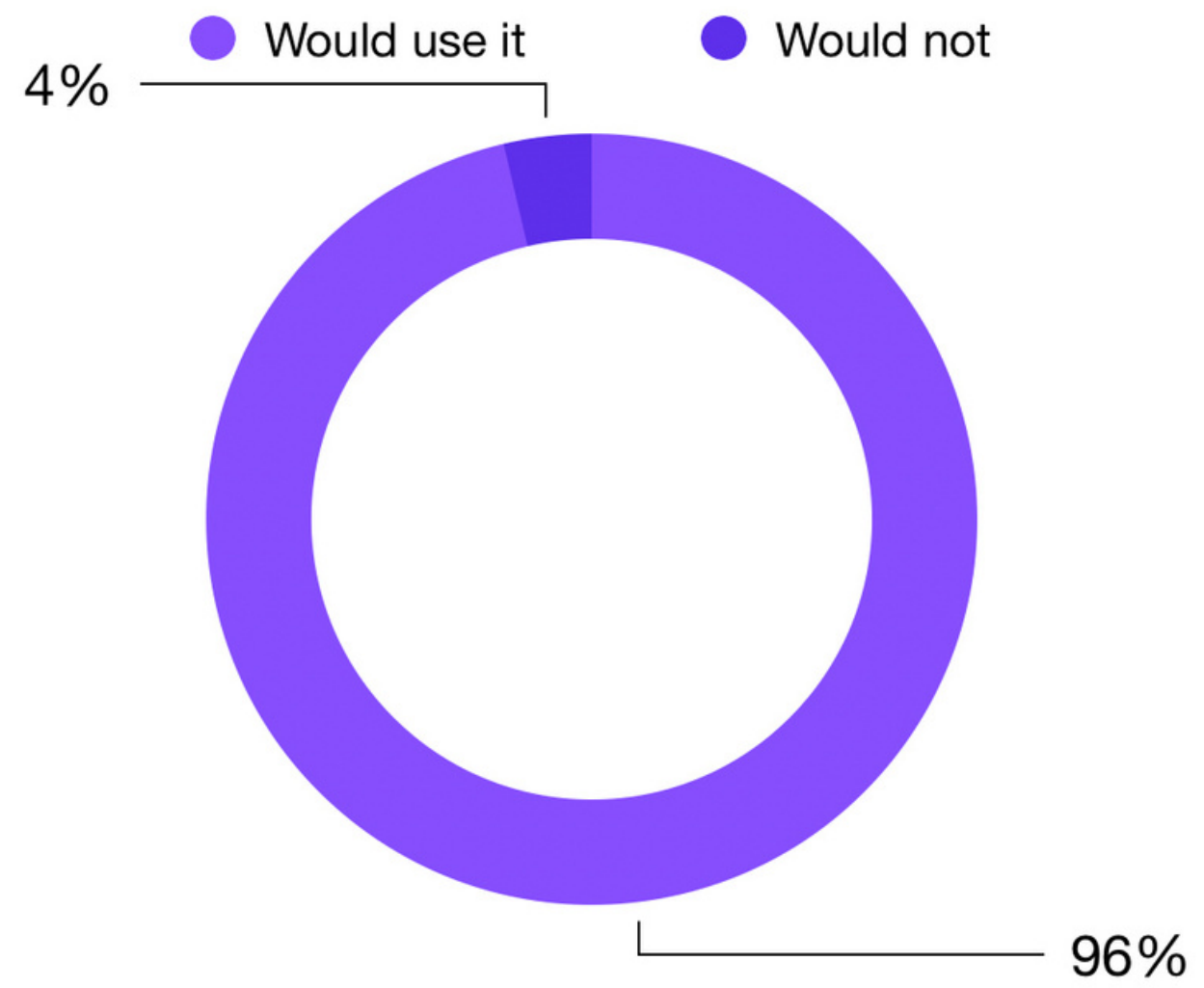
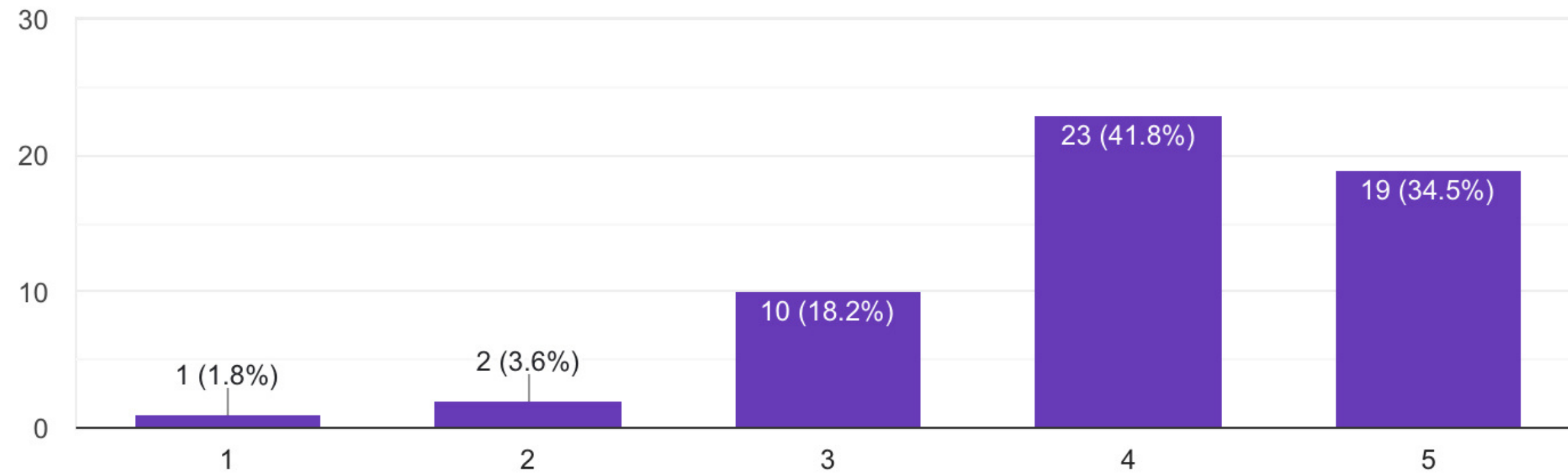


Figure 3

How often do you think you would check in with yourself if you had access to an app that we discussed today?

Figure 4

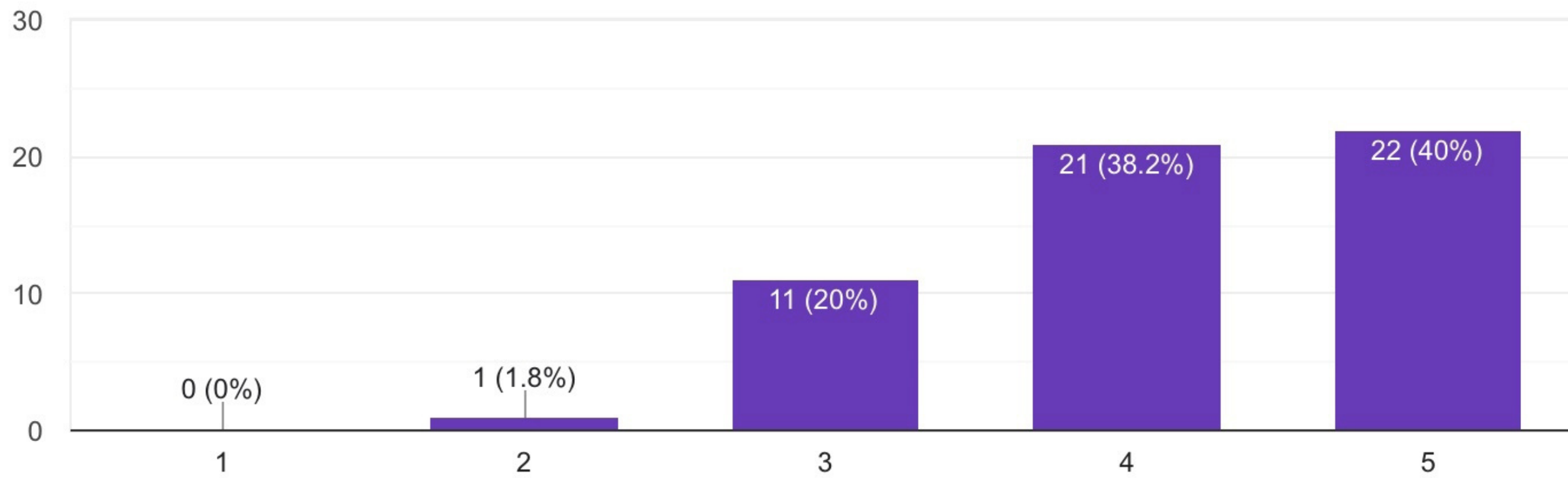
55 responses



Do you feel like the application we discussed today would be an adequate way to track and understand how you feel and what triggers you?

Figure 5

55 responses



Do you think having an app/tool that helps you track and understand how you feel would be valuable to your life?

55 responses

Figure 6

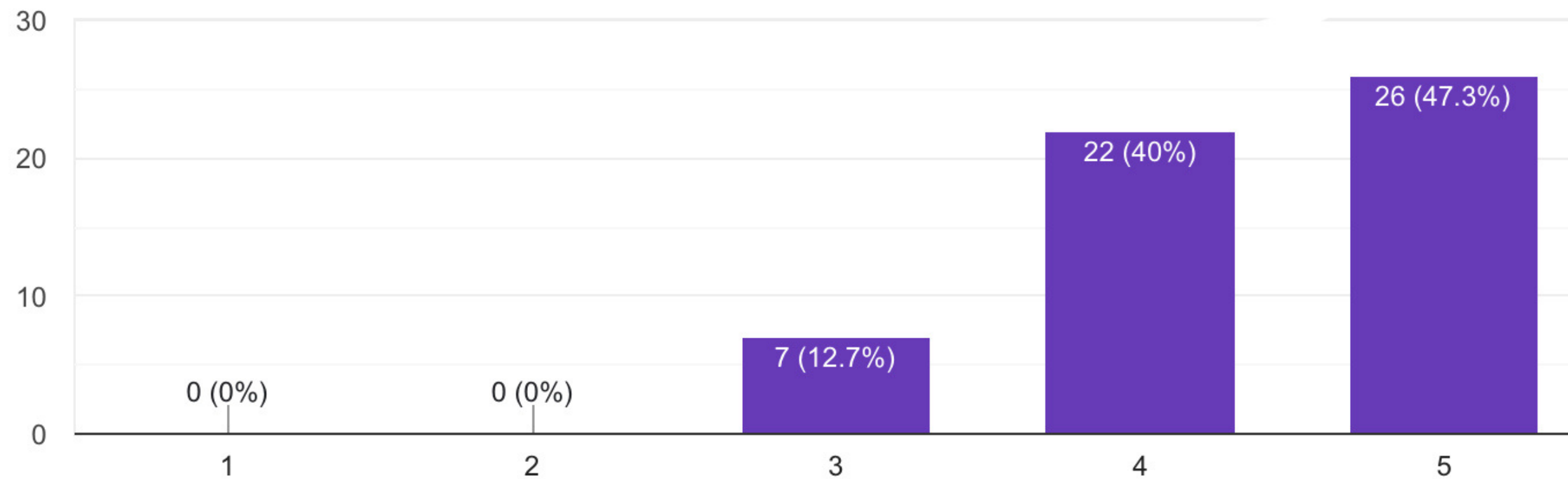


Figure 7

Key features of AI application participants interacted with:
1) mind map
2) activity dashboard and
3) achievement badge

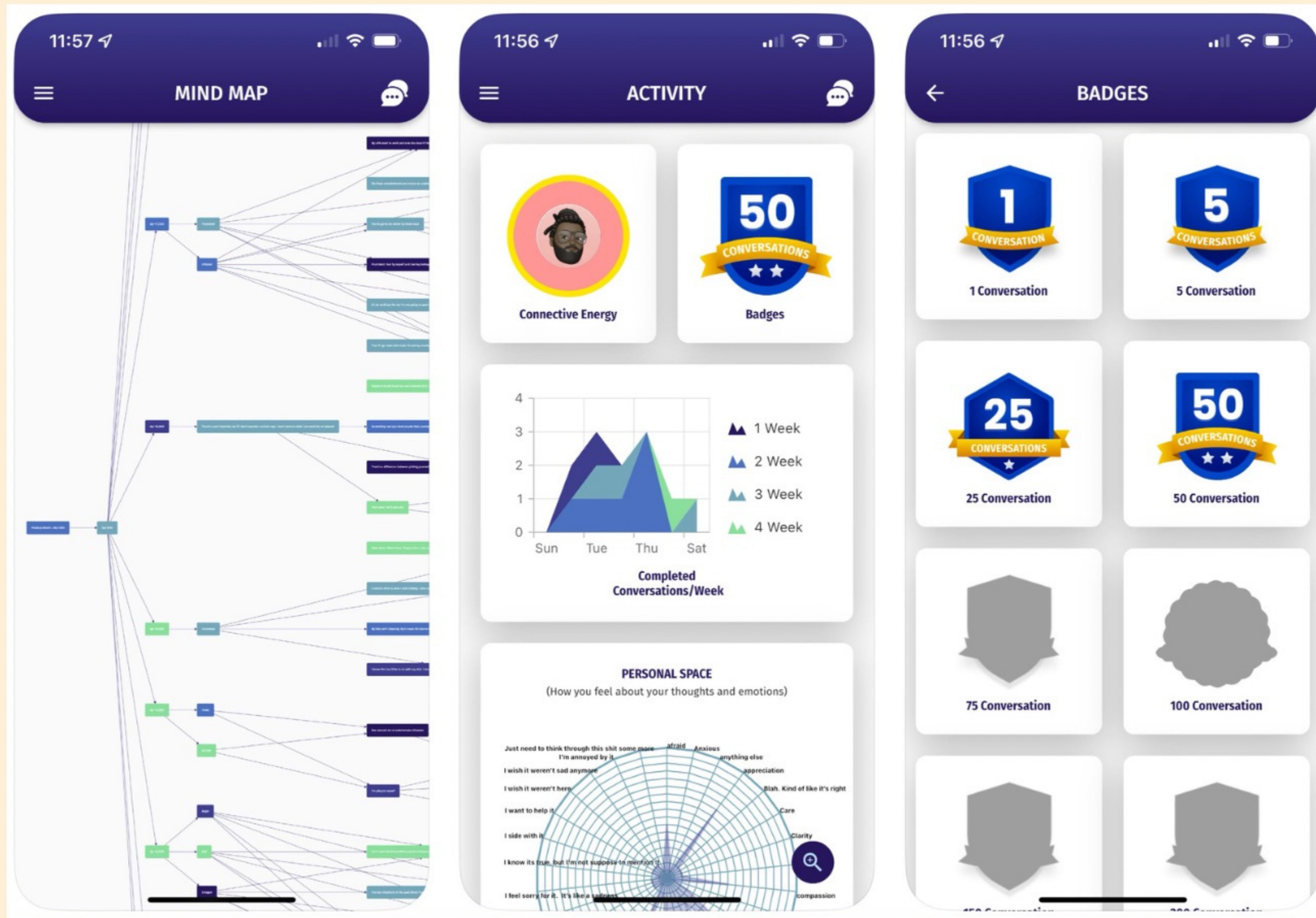
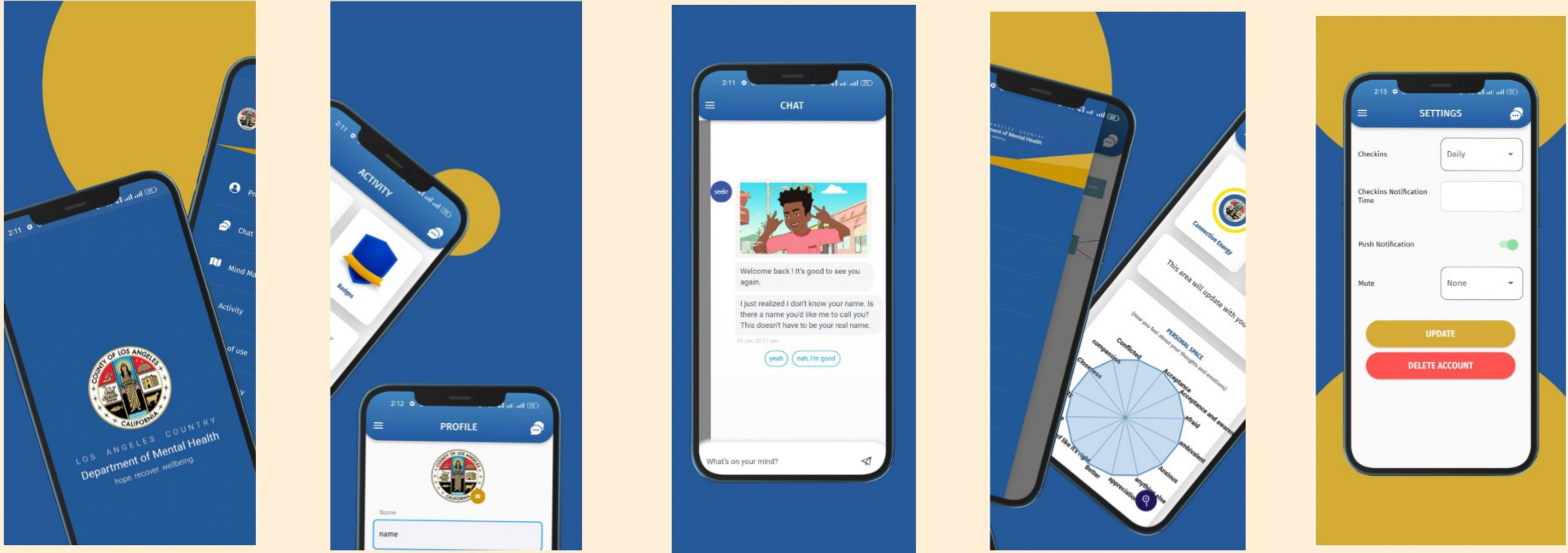
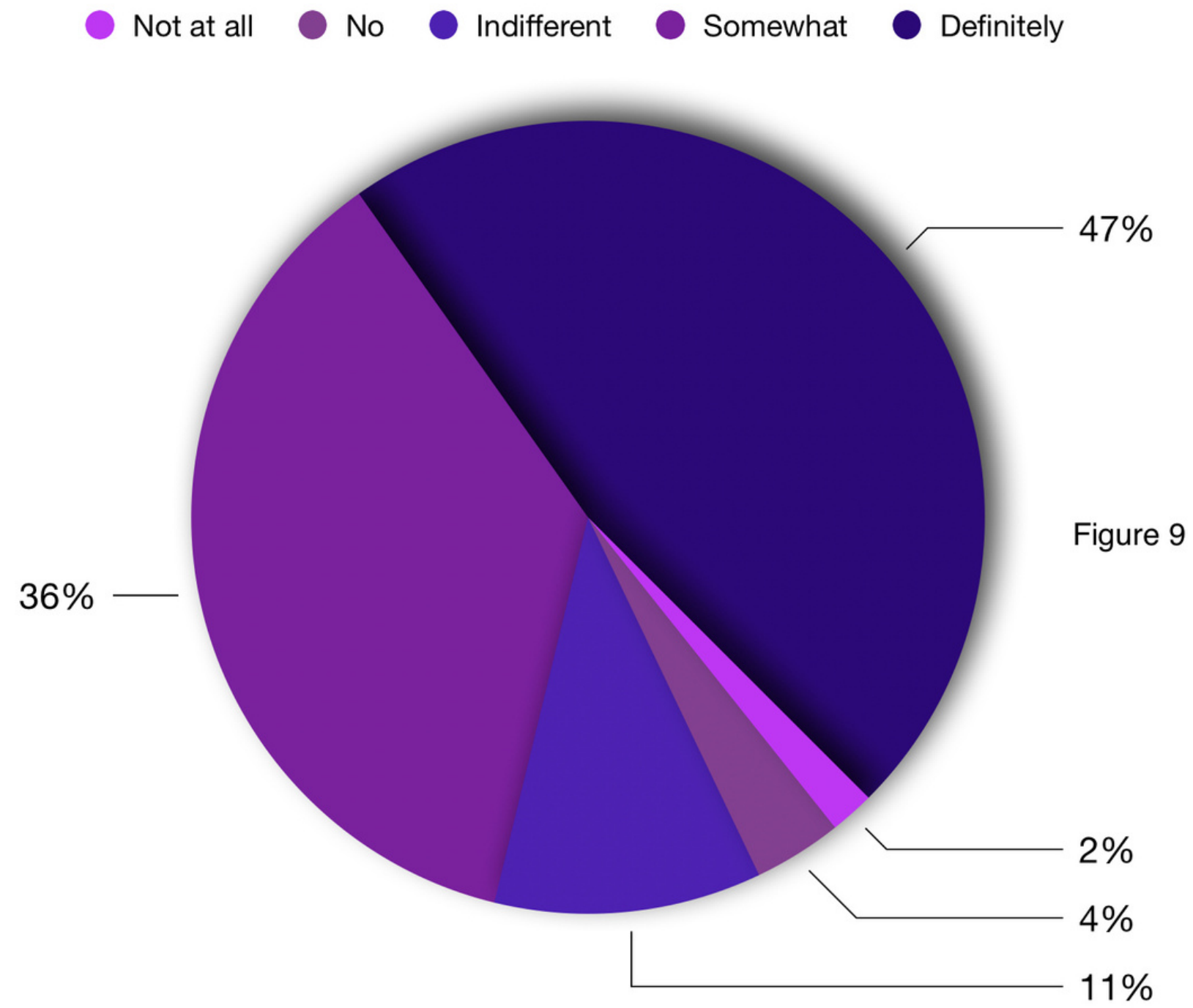


Figure 8

Updated mobile application layout with LACDMH color pallet and customized AI interface



Participants indicating whether they would trust an AI tool from LACDMH



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Figure 10



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