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RxMental - Project Paper

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Abstract—RxMental explores AI-powered mental health tools for college students, addressing the growing need for support amidst limited institutional resources. The project examines student perceptions and acceptance of AI in mental health care and education, developing user-friendly prototypes through iterative design. Key features include personalized responses, mood tracking, physical activity integration, and community support. Insights reveal varied preferences and highlight knowledge gaps, guiding future enhancements to create a comprehensive, scalable, and reliable AI-driven mental health support system for educational institutions.

1 INTRODUCTION

With rising mental health issues among students in higher education and the shortage of adequate support systems, there is a pressing need for innovative solutions. AI-powered tools offer scalable and efficient mental health services, addressing gaps that traditional systems cannot always fill. Our project, RxMental, investigates college students' perceptions of these AI-powered mental health tools and develops prototypes tailored to their needs. By understanding student perceptions and acceptance of AI in mental health, RxMental aims to facilitate the successful adoption and implementation of these technologies in educational institutions.

1.1 Research Background and Motivations

Mental health issues among higher education students are a global concern. Increasing academic pressures, social challenges, and the transition to adulthood make students particularly vulnerable to anxiety, depression, and cognitive distortions. These issues are compounded by the lack of mental health resources and support systems in many institutions. Professors often serve as the primary point of contact for students, and training them to identify and address mental

health issues can significantly impact student well-being. However, due to high student-to-professor ratios, institutions are considering AI tools to provide more effective and efficient support. These AI tools can complement traditional services by offering 24/7 support and scalable solutions. Understanding student support for AI mental health tools, their skepticism, and awareness of existing resources is crucial. Our project addressed these questions through a user research study to identify student needs and preferences, gathering data via interviews and surveys to inform the development of Figma prototypes for an AI-powered mental health tool.

1.2 Research Questions and Hypotheses

To address the critical gaps identified in our literature review, we formulated these research questions and hypotheses:

RQ1: What knowledge gaps currently exist among college students regarding their understanding of AI and mental health education?

RQ2: What are the specific needs, preferences, concerns, and primary factors influencing college students' acceptance of AI-powered mental health tools?

RQ3: How do perceptions, preferences, and concerns about AI-powered mental health tools differ between technical and non-technical majors?

H1: Students will express a need for accessible mental health education through AI-powered tools to compensate for existing resource deficiencies.

H2: Students will identify personalization and 24/7 accessibility as key needs for AI-powered mental health tools, while privacy, trust, and the perceived responsibility of the AI tool will be the primary factors influencing their acceptance.

H3: Technical majors will have more positive perceptions of AI-powered mental health tools compared to non-technical majors, due to greater familiarity with technology. Consequently, non-technical majors will express more skepticism and concerns about AI mental health tools.

1.3 Contributions and Research Significance

Our study contributes to the field by providing an enhanced understanding of college students' needs, preferences, and concerns regarding AI-powered mental

health support tools, including their knowledge gaps in mental health education and institutional resources. We offer insights into the factors that influence the acceptance, usability, and usefulness of these tools among students. Additionally, we present design guidelines, requirements, and prototypes for future development, supporting the creation of effective and user-friendly mental health support and education tools.

2 RELATED WORK

Recent progress in AI technology has enhanced digital mental health interventions, including mental health applications and AI-driven chatbots, by offering scalable and round-the-clock support that complements traditional mental health services. AI chatbots, such as Leora, engage students in dialogues about their mental well-being and deliver immediate assistance for mild anxiety and depression symptoms (van der Schyff et al., 2023). These AI tools are particularly effective when combined with conventional psychotherapy (Gual-Montolio et al., 2022) and provide crucial support to individuals who might otherwise avoid seeking help due to stigma. Moreover, they facilitate the diagnosis and analysis of cognitive distortions, aiding in better therapist matching.

Nonetheless, ethical issues like ensuring transparency and building user trust are essential for the successful adoption of these technologies (Zhang et al., 2023). For example, while Leora secures data on Amazon's AWS servers, this approach has raised privacy concerns among platform creators. The aims of a mental health platform are varied: reducing stigma, enhancing accessibility, and utilizing contemporary technologies are vital for fostering proactive help-seeking behaviors. Cultural sensitivity is also critical, given the diverse backgrounds of students. Some cultures hold stronger stigmas against mental health discussions, which can hinder students from recognizing and addressing their issues (Ahmedani, 2011). Thus, mental health services must be designed to be culturally competent and inclusive to effectively engage these groups (Bhui et al., 2018).

Another important factor is financial disparity among students. Economic barriers often obstruct access to mental health services. Providing affordable or free mental health care and addressing logistical issues, such as transportation to clinics, can significantly mitigate these barriers (Smith et al., 2019). Addressing

these complex and interconnected challenges is crucial for developing effective AI-powered mental health tools tailored to higher education students.

3 DATA AND METHODOLOGIES

3.2 Data Collection

We used survey questionnaires and interviews to collect data.

3.2.1. Pilot Surveys

Our target participants were college students from various disciplines, including technical (e.g., computer science, engineering) and non-technical majors (e.g., art, humanities). Surveys were distributed via online forms and shared through university email lists and social media groups. We included a consent form and questions on demographics, current mental health support usage, perceptions of AI in mental health, desired features, and adoption concerns. All personal identifiers were removed to ensure privacy and confidentiality. The detailed questionnaire can be viewed in *Appendix A*.

3.2.2. User Testing

Interview participants were selected from our demographic and interviewed in two rounds to evaluate the UI design. Two participants were interviewed in the first round, and six in the second. Semi-structured interviews, conducted via video conferencing platforms and in-person meetings, assessed both low and high fidelity prototypes. Round 1 user testing validated the design structure, while round 2 refined the prototypes based on iterative feedback. All personal identifiers were removed to maintain privacy. Detailed questions are listed in *Appendix B and C*.

3.3. Data Analysis

We used a mixed-method approach to analyze the collected data, combining both quantitative and qualitative methods. For the *quantitative analysis*, we performed statistical analysis of survey data to summarize student opinions and needs. This included descriptive statistics such as means, medians, and standard deviations to provide an overview of the participants' demographics and responses. Visualizations, such as pie charts and histograms, were used to illustrate key findings and trends in the data. For the *qualitative analysis*, we conducted a

thematic analysis of open-ended survey responses and interview transcripts to identify key themes and insights. Responses were categorized into themes such as perceived benefits, privacy concerns, trust issues, and desired features. By using mixed methods for data analysis, we obtained a comprehensive understanding of student needs and the factors influencing their acceptance of AI-powered mental health tools. This analysis also guided the detailed development of prototypes to ensure our designs effectively addressed these needs and factors.

3.4. Prototype Development

Our prototype development followed *an iterative feedback loop*. We started with prototypes based on pilot survey findings to test design concepts. First-round user testing interviews refined design guidelines and requirements, leading to higher fidelity versions, which were further refined in the second round of user testing. Key functionalities included personalized recommendations, 24/7 support, data sharing consent mechanisms, privacy settings, and cultural sensitivity. The user interface was designed for intuitiveness and accessibility. Using Figma, we created low-fidelity wireframes, refined through user feedback to assess usability and appeal. This process involved two phases of user testing, refining prototypes based on feedback, and developing higher fidelity versions. Final prototypes showcased user-centered AI tools effectively addressing student needs and preferences.

4 RESULTS

4.1 Pilot Surveys

Table 1 presents a summary of the data collected from the pilot surveys, involving 25 participants, providing insights into the demographics, mental health support usage, and perceptions of AI in mental health. In terms of age (mean: 30.5; minimum: 21; maximum: 50; standard deviation: 6.04; variance: 36.48), the participants were 72% aged between 25-34 years, and 12% aged 18-24 years. The survey data shows a relatively balanced gender distribution and a predominant representation of STEM majors. Notably, out of the 10 participants who had used mental health support services, 40% (4 participants) expressed dissatisfaction.

The data also highlighted various types of mental health support services used, with one-on-one counseling, group therapy, online resources, and peer support

groups being the most common. Among them, one-on-one support, such as counseling and therapy sessions, was the most commonly accessed service. This highlights a significant reliance on personalized support within the student community. However, the majority of respondents reported having limited experience with AI technologies, which suggests a potential knowledge gap that our project aims to address through educational components integrated into the AI tool. In addition, privacy concerns and the perceived lack of human empathy were identified as major issues regarding the use of AI tools for mental health support, underscoring the importance of ensuring robust privacy protections and incorporating empathetic design elements in the development of our tool¹.

Table 1 — A summary of collected data from pilot surveys

Category	Subcategory	Count	Percentage	Category	Subcategory	Count	Percentage
Age	18-24	3	12%	Major	STEM	17	68%
	25-34	18	72%		Non-STEM	8	32%
	35-44	3	12%	Used mental health tools before	Yes	10	40%
	45 and above	1	4%		No	15	60%
Gender	Female	12	48%	If, Yes,, type of tool used (check all that apply)	One-on-one counseling	11	44%
	Male	9	36%		Group therapy	4	16%
	Non-binary/ Third gender	4	16%		Online resources	7	28%
Satisfaction with mental health services	Satisfied	2	20%		Peer support groups	5	20%
	Neutral	4	40%		Mental health apps	3	12%
	Dissatisfied	4	40%		Other	10	40%

4.2 Lower Fidelity Prototypes

4.2.1 Five Phases of Design Thinking

Our approach to developing the AI-powered mental health tool was firmly rooted in design thinking principles, which emphasize a user-centered and iterative design process. As shown in *Figure 1*, the five phases allowed us to deeply understand the needs and concerns of our target users, leading to the creation of a more effective and engaging tool. By following the design thinking

¹ Additional figures visualizing the pilot survey results are available in *Appendix D*.

process, we ensured that our AI-powered mental health tool was developed with a strong focus on user needs and continuous improvement. This approach not only helped in creating a functional prototype but also laid the foundation for future iterations and enhancements.



Figure 1 — Five phases of design thinking in lower fidelity prototypes

4.2.2 Lower Fidelity Prototypes

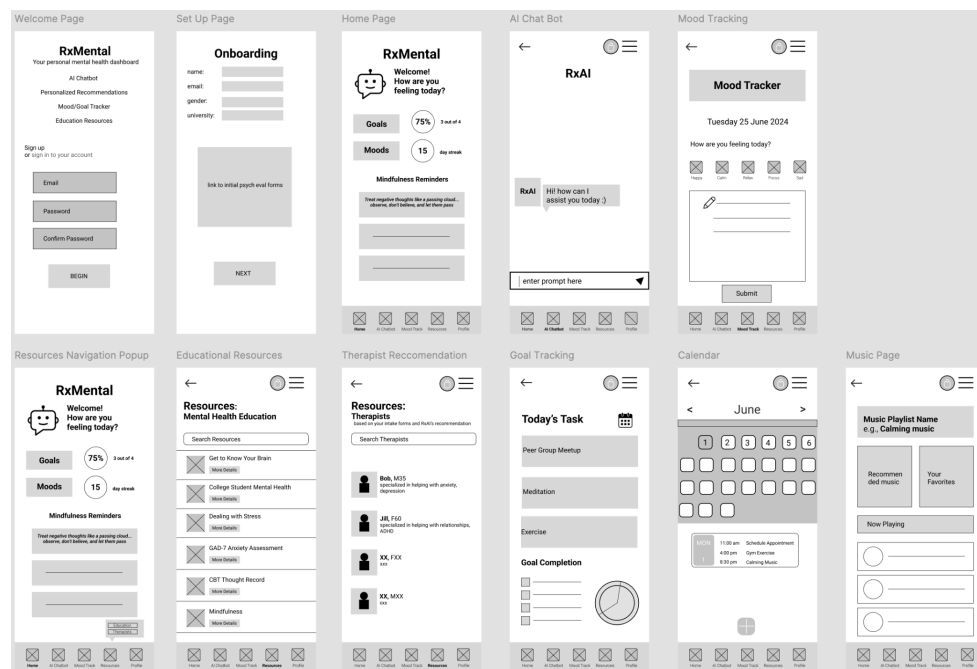


Figure 2 — Lower fidelity prototypes

Figure 2² presents our lower fidelity prototypes. These wireframes showcase the initial layout and functionalities of the AI chatbot, resource pages, and tracking tools. The prototypes were designed to provide a clear and user-friendly interface, facilitating easy navigation and interaction. The AI chatbot interface includes features for initiating conversations, accessing mental health resources, and tracking mental health metrics over time. Resource pages were designed to offer comprehensive information on various mental health topics and services available to students. The tracking tools allow users to monitor their mental health status and progress, providing valuable insights and fostering a proactive approach to mental well-being.

4.3 User Testing Round 1 Results

In our first round of user testing, participants were asked to interact with the lower fidelity prototypes and provide feedback on their usability, functionality, and overall experience. Key findings were shown in Table 2. Based on user feedback and identified concerns, we have refined our prototypes and updated them to higher fidelity, enhancing the effectiveness and acceptance of our AI-powered mental health tool.

Table 2 — Key findings from user testing round 1

Key Finding Category	User Feedback in Round 1
Usability	Most users found the interface intuitive and easy to navigate. However, some participants suggested simplifying certain features to enhance accessibility.
Functionality	Users appreciated the comprehensive range of resources and tools available. They particularly valued the ability to track their mental health metrics and access personalized support through the AI chatbot.
Overall Experience	Feedback indicated a positive reception to the concept of an AI-powered mental health tool, with many users expressing interest in using such a tool regularly. Concerns raised during the pilot survey, such as privacy and empathy, were reiterated, emphasizing the need for ongoing attention to these aspects in future development stages.

4.4 Higher Fidelity Prototypes³

As shown in Figure 3, upon opening the app, users are greeted with a friendly and intuitive interface. The initial screen offers options to either get started or directly access the main features, facilitating a seamless onboarding experience. We specifically chose the color blue as it has been shown to have a calming effect.

² To view higher resolution images of all prototypes from Figures 2 to 4, we provide shared Figma links in Appendix E.

³ Theoretical basis for UI design choices are available in Appendix F.

The home screen provides a concise overview of user goals and mood status, complemented by mindfulness reminders. This design choice encourages positive thinking and relaxation throughout the day, promoting a holistic approach to mental well-being. Our AI chatbot, RxAI, introduces itself and clearly explains the privacy policy, ensuring transparency and user trust. The design emphasizes user control by requiring acknowledgment of data usage terms before proceeding.

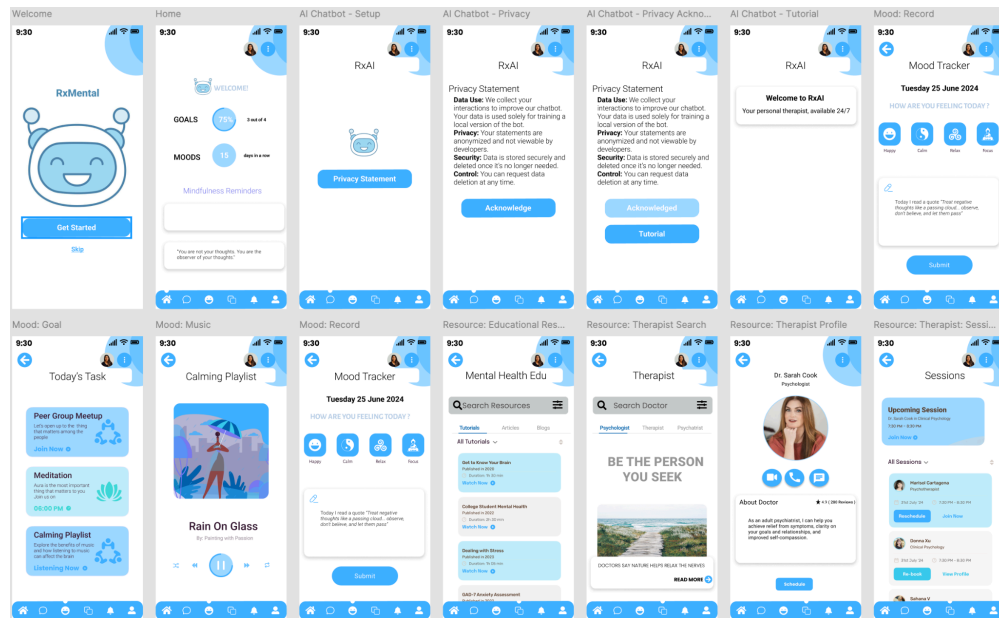


Figure 3 — Higher fidelity prototypes

In addition, we allowed users to log their daily moods—such as happy, calm, relaxed, and focused—and add personal notes for reflection. This feature is designed for ease of use, with a clean layout that supports regular mood tracking and personal insights. Users can also set and track tasks and goals, like joining peer group meetings, meditation sessions, or listening to calming playlists. The resource section includes Educational Resources with tutorials and articles to equip users with valuable mental health knowledge and coping strategies. Additionally, the Therapist Search feature allows users to view therapist profiles and schedule sessions, simplifying access to professional support.

4.5 User Testing Round 2 Results

In User Testing Round 2, we conducted six interviews, including feedback from two returning users and four new users. *Table 3* shows the findings from our user testing round 2. Overall, the feedback from User Testing Round 2 confirmed

positive reception of many updated features, particularly the AI chatbot tutorial and privacy notice. However, suggestions for additional features and enhancements, such as a community support option and more detailed AI responses, have been noted for potential future improvements.

Table 3 — Key findings from user testing round 2

Users	User Feedback in Round 2
Two returning users	Positive changes: Tutorial for AI Chatbot: Both returning users found the tutorial for the AI chatbot to be clear and helpful. Privacy Notice: The clear presentation of the privacy notice on the AI landing page was well-received.. Remaining issues: They emphasized the need for a dedicated community support feature to facilitate peer interaction.
Four new users	Design & Usability: Overall Design: The app was generally praised for its user-friendliness, with particular appreciation for the mood tracker layout and visual design. Icons & Usability: Some icons were found to be unclear, and the design team was advised to consider enhancing icon clarity. AI Chatbot: Users appreciated the clean design but suggested that the AI chatbot could benefit from more detailed and personalized responses. They valued the tutorial but felt the chatbot's responses could be more accurate and creative in suggesting mood improvement strategies. Engagement: The integration of the music playlist was well-received, and users found the app engaging. Additional Features: Physical Activity Tracking: There was a recommendation to add a feature for tracking physical activities. Customization Options: Users desired more options to customize the user interface. Art Therapy Exercises: The inclusion of art therapy exercises as part of the mental health resources was suggested to enhance the app's offerings.

4.6 Revision of Higher Fidelity Prototypes

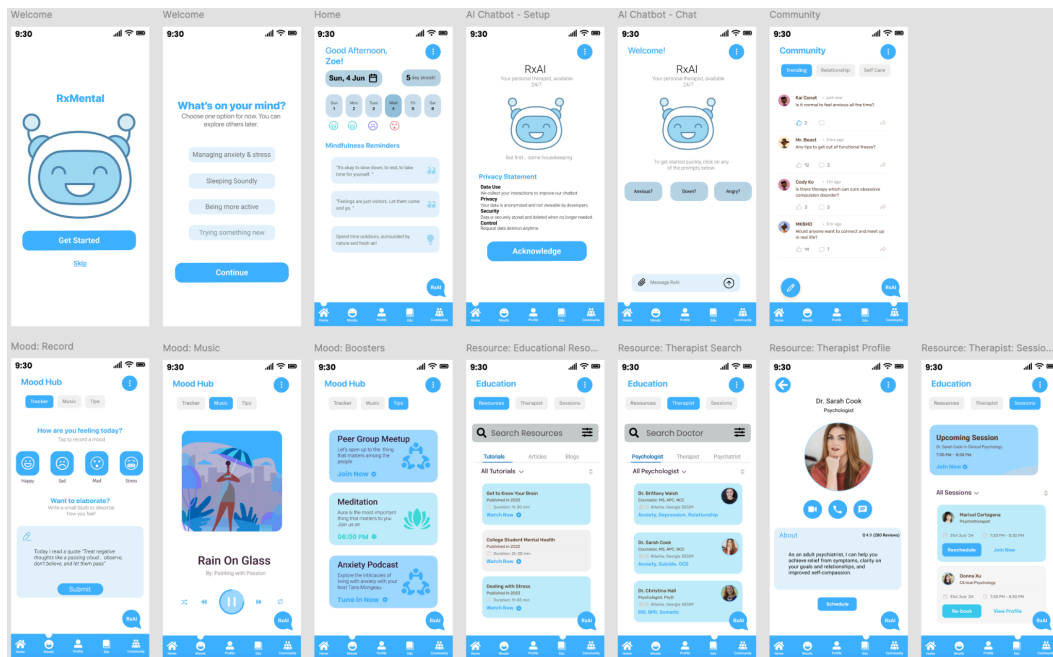


Figure 4 — Revised higher fidelity prototypes

Figure 4 shows our which incorporate the feedback received during User Testing Round 2. We have streamlined the menu bar to enhance navigation more intuitively. The home dashboard has been refined to provide a cleaner, more organized layout, featuring a daily mood summary and today's date for immediate context. A new streak feature has been added to encourage continuous engagement with the app. We have introduced a *Community Engagement Page* to address user requests for peer interaction, facilitating a sense of connection and support. Design consistency has been improved with a unified font and design hierarchy, enhancing the overall visual coherence of the app. To further facilitate user interaction with the AI chatbot, we have implemented hotkeys, making conversations more efficient and user-friendly. These revisions are aimed at refining the app's usability and responsiveness, directly reflecting the insights and suggestions provided by our test participants.

5. KEY INSIGHTS, DISCUSSIONS, AND LIMITATIONS

5.1 Key Insights

Our study revealed that many students are unaware of AI's potential benefits and risks in mental health, highlighting the need for educational components to boost awareness and acceptance. Students emphasized the importance of personalized and accurate responses, mood diaries, physical activity tracking, and community support features, with data security and privacy as primary concerns. Clear privacy notices were shown to alleviate anxiety and improve acceptance, while ease of use, effective tutorials, and user-friendly design were crucial for the tool's acceptance. Differences across majors were notable, with technical majors showing better understanding and interest in advanced AI features, while non-technical majors preferred simpler interfaces and had higher privacy concerns. Future research should include a broader age range and balance representation between technical and non-technical majors to understand diverse perceptions and concerns.

5.2 Discussions

The overall reception of the AI-powered mental health tool was positive. Key features such as a user-friendly design and effective tutorials were crucial for enhancing user experience, with clear privacy notices successfully addressing data security concerns. Students suggested additional features like

personalization, physical activity tracking, a community page, and art therapy exercises, indicating a demand for a holistic approach to mental health. Significant knowledge gaps, especially among non-technical majors, highlight the need for clear tutorials to enhance acceptance and usage. The insights from this study will guide the refinement of prototypes to better meet student needs. Future developments should focus on creating more interactive and detailed prototypes and educating users about AI's capabilities in mental health.

5.3 Limitations

The study's sample size for the pilot survey was relatively small, with 25 respondents primarily aged 25-34 and from STEM/technical majors, which may not fully represent the broader student population. Future research should aim for a larger and more diverse sample to capture a wider range of perspectives. Most respondents had limited AI experience, which may have influenced their perceptions and feedback. As AI becomes more integrated into daily life, future studies might find different results. Additionally, the data collected through surveys and interviews is subject to biases such as social desirability bias, so future research could incorporate more objective measures, such as usage analytics and behavioral tracking, to complement self-reported data and gain deeper insights into user interactions.

6 CONCLUSION

This study explored the potential of an AI-powered mental health tool for college students, focusing on user knowledge, expectations, and concerns. Through our pilot surveys, iterative prototype development, and two rounds of user testing, we gained valuable insights into the design and functionality of such tools. The positive reception indicates a strong interest in these tools, provided they are user-friendly, secure, and capable of offering personalized support. Key insights highlighted the importance of addressing privacy concerns, simplifying the user interface, and providing comprehensive tutorials to bridge knowledge gaps. Furthermore, integrating real-time feedback mechanisms could enhance user satisfaction and engagement. Future research should expand the demographic scope and explore more interactive prototypes. By addressing these areas, AI-powered mental health tools can significantly improve mental health support within educational institutions.

7 REFERENCES

1. Ahmedani B. K. (2011). Mental Health Stigma: Society, Individuals, and the Profession. *Journal of social work values and ethics*, 8(2), 41–416.
2. Baker, J., & Cave, K. (2020). Mental health in higher education: Can a digital strategy help? *EDUCAUSE Review*. Retrieved from <https://er.educause.edu/articles/2020/5/mental-health-in-higher-education-can-a-digital-strategy-help>
3. Bhui, K., Dinos, S., & Jones, E. (2018). Cultural competence and evidence-based practice in mental health. *Epidemiology and Psychiatric Sciences*, 27(1), 19-28.
4. Foulkes, L., & Andrews, J. L. (2023). Are mental health awareness efforts contributing to the rise in reported mental health problems? A call to test the prevalence inflation hypothesis. *New Ideas in Psychology*, 69, 101010.
5. Gual-Montolio, P., Jaén, I., Martínez-Borba, V., Castilla, D., & Suso-Ribera, C. (2022). Using Artificial Intelligence to Enhance Ongoing Psychological Interventions for Emotional Problems in Real- or Close to Real-Time: A Systematic Review. *International journal of environmental research and public health*, 19(13), 7737. <https://doi.org/10.3390/ijerph19137737>
6. Levy, A. (2022). Transforming campus mental health care. *Monitor on Psychology*, 53(8).
7. Shim, Y. R., Eaker, R., & Park, J. (2022). Mental health education, awareness, and stigma regarding mental illness among college students. *Journal of Mental Health & Clinical Psychology*, 6(3).
8. Smith, D. T., Mouzon, D. M., & Elliott, M. (2019). Reviewing the assumptions about men's mental health: An exploration of the gender binary. *American Journal of Men's Health*, 12(5), 1084-1095.
9. van der Schyff EL, Ridout B, Amon KL, Forsyth R, Campbell AJ. Providing Self-Led Mental Health Support Through an Artificial Intelligence-Powered Chat Bot (Leora) to Meet the Demand of Mental Health Care. *J Med Internet Res*. 2023 Jun 19;25:e46448. doi: 10.2196/46448. PMID: 37335608; PMCID: PMC10337342.
10. Zhang, M., Scandiffio, J., Younus, S., Jeyakumar, T., Karsan, I., Charow, R., Salhia, M., & Wiljer, D. (2023). The adoption of AI in mental health care—perspectives from mental health professionals: Qualitative descriptive study. *JMIR Formative Research*, 7(1), e47847.

8 APPENDIX

APPENDIX A. Survey Questionnaire

Survey Questionnaire: AI-Powered Mental Health Tools for College Students

Consent Form: Please read the following consent form before we begin. By proceeding, you agree to participate in this study and acknowledge that your responses will be used for research purposes. Your data will be kept confidential, and you may withdraw from the study at any time.

Demographics:

1.1. Age:

Under 18

18-24

25-34

35-44

45 and above

1.2. Gender:

Male

Female

Non-binary/Third gender

Prefer not to say

1.3. Major: _____

Current Mental Health Support:

2.1. Have you ever used mental health support services (e.g., counseling, therapy) at your college?

Yes

No

2.2. If yes, how satisfied were you with the services provided?

Very satisfied

Satisfied

Neutral

Dissatisfied

Very dissatisfied

2.3. What type of mental health support services have you used? (Select all that apply)

One-on-one counseling

Group therapy

Online resources (e.g., articles, videos)

Peer support groups

Mental health apps

Other (please specify): _____

Perceptions of AI in Mental Health:

3.1. How familiar are you with AI-powered mental health tools (e.g., chatbots, apps)?

Very familiar

Somewhat familiar

Not familiar

3.2. Do you believe AI-powered tools can effectively support mental health?

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

3.3. What benefits do you think AI-powered mental health tools can offer? (Select all that apply)

Accessibility and convenience

Anonymity

Cost-effectiveness

Consistent support

Immediate responses

Other (please specify): _____

Needs and Preferences:

4.1. What features would you find most useful in an AI-powered mental health tool? (Select all that apply)

Mental health education

Personalized recommendations

24/7 availability

Anonymity

Real-time chat with a bot

Scheduling appointments with human counselors

Mood tracking

Cognitive Behavioral Therapy (CBT) exercises

Crisis intervention resources

Other (please specify): _____

4.2. How important is it for the AI tool to be culturally sensitive and inclusive?

Very important

Important

Neutral

Not important

Not at all important

4.3. What kind of interface do you prefer for an AI-powered mental health tool?

Text-based chat

Voice interaction

Visual prompts and icons

Combination of the above

Other (please specify): _____

Concerns Regarding AI-Powered Tools:

5.1. What are your primary concerns about using AI-powered mental health tools? (Select all that apply)

Privacy of personal data

Accuracy of AI responses

Lack of human empathy

Dependence on technology

Misinterpretation of input

Security of data storage

Other (please specify): _____

5.2. How likely are you to use an AI-powered mental health tool if it ensured strict privacy and data security?

Very likely

Likely

Neutral

Unlikely

Very unlikely

5.3. How concerned are you about the potential for AI tools to misinterpret or misunderstand your input?

Very concerned

Concerned

Neutral

Unconcerned

Not at all concerned

Acceptance and Adoption:

6.1. What would increase your willingness to use AI-powered mental health tools? (Select all that apply)

Endorsement by mental health professionals

Positive reviews and testimonials

Evidence of effectiveness through studies

Integration with existing mental health services

User-friendly interface

Other (please specify): _____

6.2. How important is it for the AI tool to provide options to connect with human counselors if needed?

Very important

Important

Neutral

Not important

Not at all important

6.3. How likely are you to recommend an effective AI-powered mental health tool to your peers?

Very likely

Likely

Neutral

Unlikely

Very unlikely

Additional Comments:

7.1. Please provide any additional comments or suggestions you have regarding AI-powered mental health tools for college students.

Interview Participation:

8.1. Would you be willing to participate in an in-depth interview after completing this survey to discuss your thoughts in more detail?

Yes, I would like to schedule an interview with you.

No.

Thank you for participating in this survey! Your responses are valuable to our research.

APPENDIX B. Interview questions - User Testing Round 1

Round 1 user testing:

For the first round of user testing with low-fidelity prototypes, our interview questions focus on understanding the user's initial impressions, identifying any major usability issues, and gathering feedback on the overall structure and functionality of the interface. We hope to gather comprehensive feedback on the initial design and functionality of the low-fidelity prototype, which will be invaluable in guiding improvements for the higher-fidelity versions.

Here are our questions:

Introductory Questions

Background Information

- Could you tell us a little about your background and field of study?
- How familiar are you with using mental health tools or apps, especially those integrated with AI technologies?

General Impressions

- What are your initial thoughts on the design of the prototype?
- How do you feel about the overall layout and structure of the interface, particularly the AI-integrated features?

Usability and Functionality

Navigation

- Can you describe how you would go about finding mental health resources and educational content using this prototype?
- Were there any points where you felt confused or unsure about what to do next, especially when interacting with the AI features?

Features and Content

- Are the available features, including educational resources, clear and easy to understand?
- Is there any feature that you found particularly useful or unnecessary?

Accessibility

- How easy is it to access the mental health information and educational content you're looking for within the prototype?
- Do you think the prototype accommodates users with different levels of technical proficiency and mental health knowledge?

Specific Elements

Design and Aesthetics

- What do you think about the visual design of the prototype?
- Are there any design elements, including those related to AI interaction, that you find distracting or appealing?

Information Presentation

- Is the mental health information and educational content presented in a way that is easy to digest and understand?
- Are there any sections that you found overwhelming or lacking in detail?

Feedback and Suggestions

Positive Aspects

- What did you like most about the prototype?
- Which feature, including educational content, do you think would be most beneficial for students using this platform?

Areas for Improvement

- What aspects of the prototype do you think need improvement?
- Do you have any suggestions for features or design changes?

User Needs and Concerns

- Do you feel that this prototype, with its AI features, effectively addresses your mental health support and educational needs?
- Are there any concerns you have about using AI-powered mental health tools?

Closing Questions

Overall Experience

- How would you rate your overall experience with this prototype on a scale from 1 to 10?
- Is there anything else you would like to share about your experience or any additional feedback?

Thank you for sharing your insights and perspectives with us today. Your input is incredibly valuable to our research efforts.

APPENDIX C. Interview questions - User Testing Round 2

Round 2 user testing:

For the second round of user testing with a high-fidelity prototype, our interview questions focus on the refined interface, the effectiveness of the AI features, and detailed feedback on user experience and usability. We hope to gather detailed feedback on the improvements made in the high-fidelity prototype, especially focusing on the integration and effectiveness of AI features, to ensure the tool meets user needs and preferences effectively.

Here are our interview questions:

Introductory Questions

Background Information

- Could you tell us a little about your background and field of study?
- Have you used mental health tools or apps before, particularly those with AI features?

General Impressions

- What are your initial thoughts on the updated high-fidelity prototype?
- How do you feel about the overall layout and structure of the refined interface?

Usability and Functionality

Navigation

- How easy was it to navigate through the updated interface to find mental health resources and educational content?
- Did you encounter any difficulties or confusion while using the new features?

Features and Content

- How effective do you find the AI-driven educational resources and support features in this version?

- Are there any features that you found particularly improved or still need further refinement?

Accessibility

- How accessible do you find the mental health information and educational content in the updated prototype?
- Do you think the improvements accommodate users with varying levels of technical proficiency and mental health knowledge better than the previous version?

Specific Elements

AI Integration

- How do you feel about the AI features in this updated version?
Are they more intuitive and helpful?
- Can you provide examples of how the AI effectively personalized your experience or delivered relevant content?

Design and Aesthetics

- What are your thoughts on the visual design of the updated prototype?
- Are there any design elements, including AI interactions, that you find particularly improved or still distracting?

Information Presentation

- How well is the mental health information and educational content presented in this version, especially the AI-generated content?
- Are there any sections that you found more understandable or still overwhelming?

Feedback and Suggestions

Positive Aspects

- What did you like most about the updated high-fidelity prototype, including the AI features?

- Which AI-driven feature, including educational content, do you think has been most beneficial or improved the most?

Areas for Improvement

- What aspects of the updated prototype, particularly the AI integration, do you think still need improvement?
- Do you have any suggestions for further enhancements or additional AI features?

User Needs and Concerns

- Do you feel that this updated prototype, with its enhanced AI features, effectively addresses your mental health support and educational needs?
- Are there any concerns you have about using AI-powered mental health tools in this updated version?

User Experience

Overall Experience

- How would you rate your overall experience with the updated high-fidelity prototype, considering its AI capabilities, on a scale from 1 to 10?
- How does this updated version compare to the previous one in terms of usability and effectiveness?

Future Use

- Based on this updated prototype, how likely are you to use this tool regularly for mental health support and education?
- Is there anything else you would like to share about your experience or any additional feedback?

Thank you for sharing your insights and perspectives with us today. Your input is incredibly valuable to our research efforts.

APPENDIX D. Additional Figures

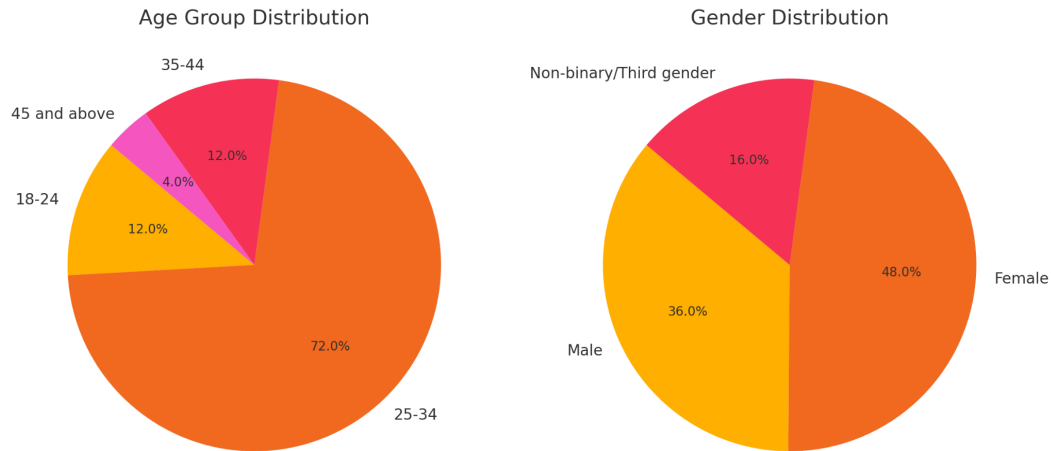


Figure 5 - Survey demographic pie chart (age and gender)

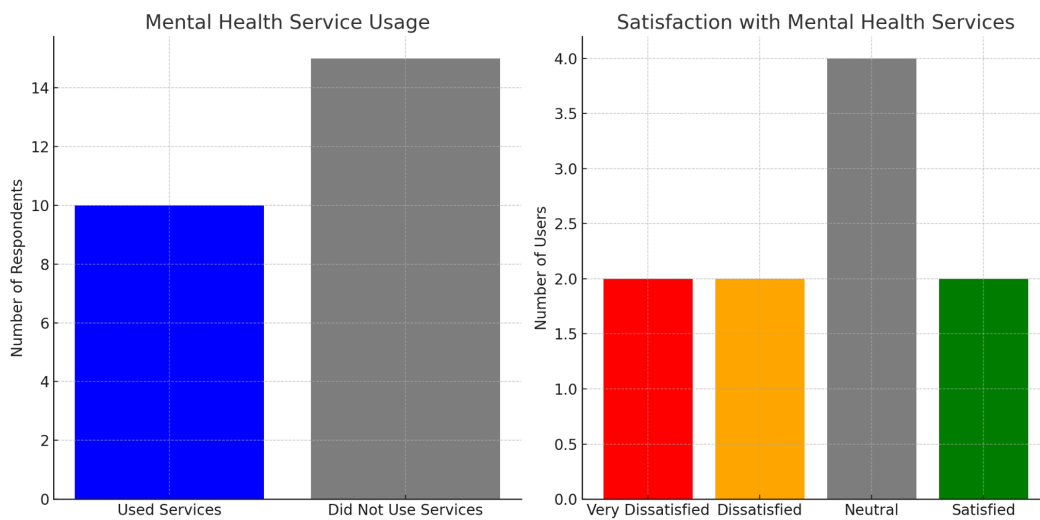


Figure 6 - Distribution of prior mental health tool usage

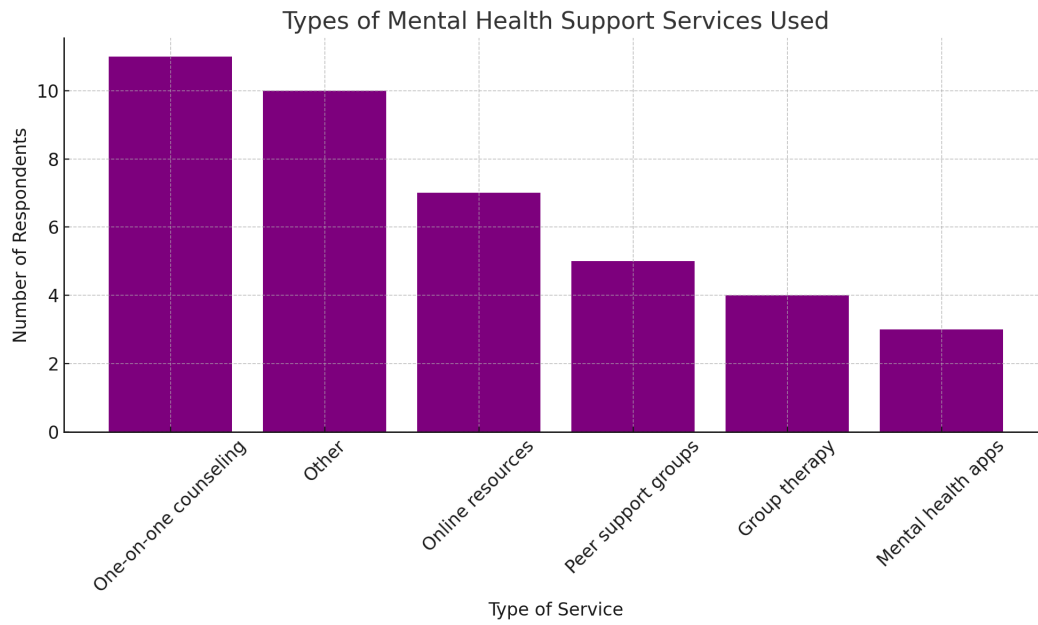


Figure 7 - Distribution of prior mental health support services

APPENDIX E. Shared Figma Links of Prototypes

Here, we provide shared Figma links to view high-resolution versions of the prototypes:

Lower Fidelity Prototypes:

<https://www.figma.com/design/klkXAPXMp852sC55COLApb/RxMental-Prototypes?node-id=0-1&t=yNIJIW0SoC7Fv87Q-1>

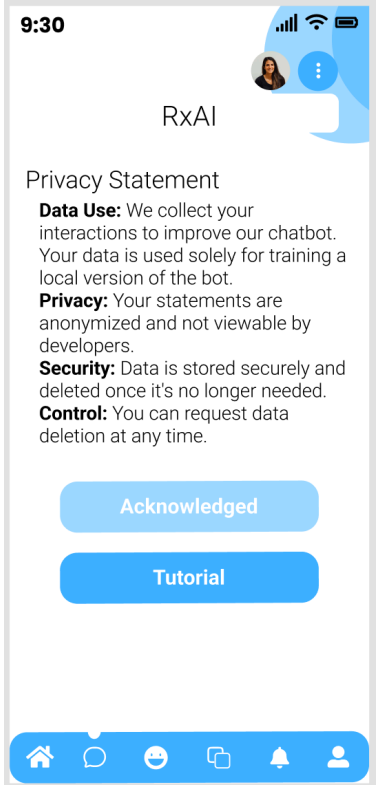
Higher Fidelity Prototypes:

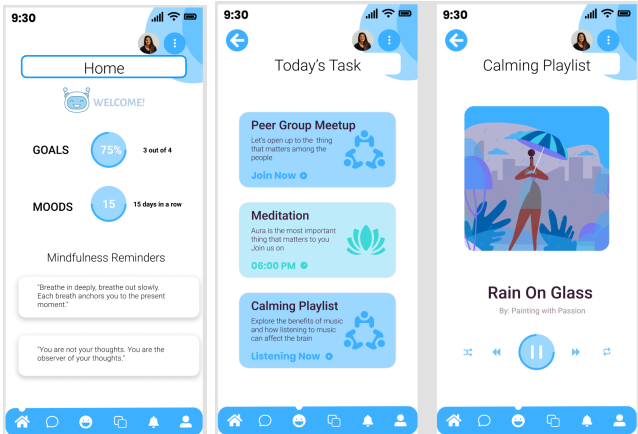
<https://www.figma.com/design/klkXAPXMp852sC55COLApb/RxMental-Prototypes?node-id=464-154&t=yNIJIW0SoC7Fv87Q-1>

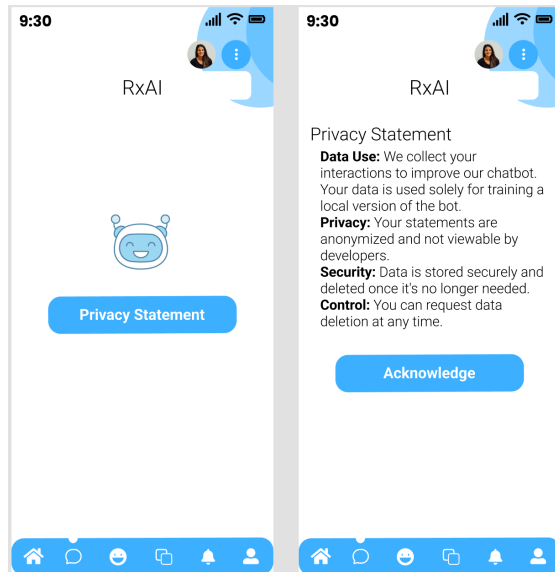
Minor Revision of Higher Fidelity Prototypes:

<https://www.figma.com/design/klkXAPXMp852sC55COLApb/RxMental-Prototypes?node-id=561-229&t=yNIJIW0SoC7Fv87Q-1>

APPENDIX F. Theoretical Basis for UI Design Choices

Theoretical Basis for UI Design	Example
User-Centered Design (UCD) • Definition: User-Centered Design (UCD) is an iterative design process that focuses on users and their needs at each phase of the design process. • Application in Prototype: • Feedback Incorporation: We conducted user interviews to gather feedback, which was used to refine the design. • Example: Tutorial for AI chatbot was added based on user confusion.	

Theoretical Basis for UI Design	Example
Cognitive Load Theory - Definition: Cognitive Load Theory suggests that designers should avoid overloading users' cognitive capacity. - Application in Prototype: - Minimalist Design: The layout is clean and straightforward to minimize cognitive overload. - Example 1: Clear navigation and simplified home page to help users find resources easily. - Example 2: Better integration of the Music Page into the Mood Category to provide a more intuitive and less cluttered user experience.	 Example 1 Example 2

Theoretical Basis for UI Design	Example
Privacy and Security Considerations - Importance: Users need to feel their data is secure to trust the application. - Application in Prototype: - Privacy Statements: Clearly displayed privacy statements and options for users to manage their data. - Example: Privacy notice on the AI landing page.	 9:30 9:30 RxAI RxAI Privacy Statement Data Use: We collect your interactions to improve our chatbot. Your data is used solely for training a local version of the bot. Privacy: Your statements are anonymized and not viewable by developers. Security: Data is stored securely and deleted once it's no longer needed. Control: You can request data deletion at any time. Privacy Statement Acknowledge

APPENDIX G. Team Responsibilities

Team Responsibilities

We briefly listed our team responsibilities in *Table 4*. As a two-student team, we collaboratively worked on most aspects of the project, ensuring a cohesive and integrated approach to our research and development efforts.

Table 4 — Team Responsibilities

Task	Team Members
Data collection: Survey questionnaire design and distribution	Adithya, Zhiqiu
Data analysis	Adithya, Zhiqiu
Prototype design guidelines and requirements	Zhiqiu
Identifying prototype interface features	Adithya
Figma prototyping	Adithya, Zhiqiu
Data collection: first-round user testing interviews	Adithya, Zhiqiu
Data collection: second-round user testing interviews	Adithya, Zhiqiu
Findings and future implementations	Adithya, Zhiqiu
Final project, paper, and presentation	Adithya, Zhiqiu