The Buddy System: Incorporating AI in mental health – Mobile app development & empirical study of AI perceptions

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Project Goals

1. To improve users' mental well-being & integrating daily acts of self-care
2. To create an intuitive **UI/UX** encouraging users to engage with the *Buddy* mobile app regularly
3. To integrate The **Gemini** Large Language Model **API** through a chatbot companion: *Sofia*
4. To conduct an **empirical study** investigating the perceptions of AI

Research questions

1. Is **familiarity with LLM** correlated with perceptions incorporating AI in the mental health field?
2. Is **familiarity with any sort of AI** technology correlated with perceptions of incorporating AI in the mental health field?

Methods
Quantitative survey made on Qualtrics distributed through CloudResearch

Participants & Design:
87 adults from the United States, average age: 37.21
"MyAI" vs "Sofia" **framing manipulation**

Materials & Procedure:
We measured:
 - Familiarity with technology
 - Perceptions of AI in mental health
 - Personality (**Openness** to experience)
 - Demographics

Mediation analysis

The overall mediation model was statistically significant between openness/ familiarity and positive perception of AI ($\beta = .49$ $p < .001$)

- **Openness** was a **mediating variable** between familiarity with AI and positive perception ($\beta = .09$, $p = .39$)

- **Familiarity with AI** was not, as the model stayed significant when controlling this variable ($\beta = .47$, $p < .001$)

Moderation analysis

- **Chatbot name:** myAI vs Sofia had no moderating effect ($\beta = .10$, $p = .85$)

(a) Buddy App Home Page

(b) Example of interaction with Sofia

Fields of study: Mobile App development

- **Prompt engineering**: instructing a model
- **Generative AI**
- Accessing an **LLM**
- **User Interface/ User Experience** design

Correlation Results

Table 6.4: Bivariate Correlations Between Main Study Variables

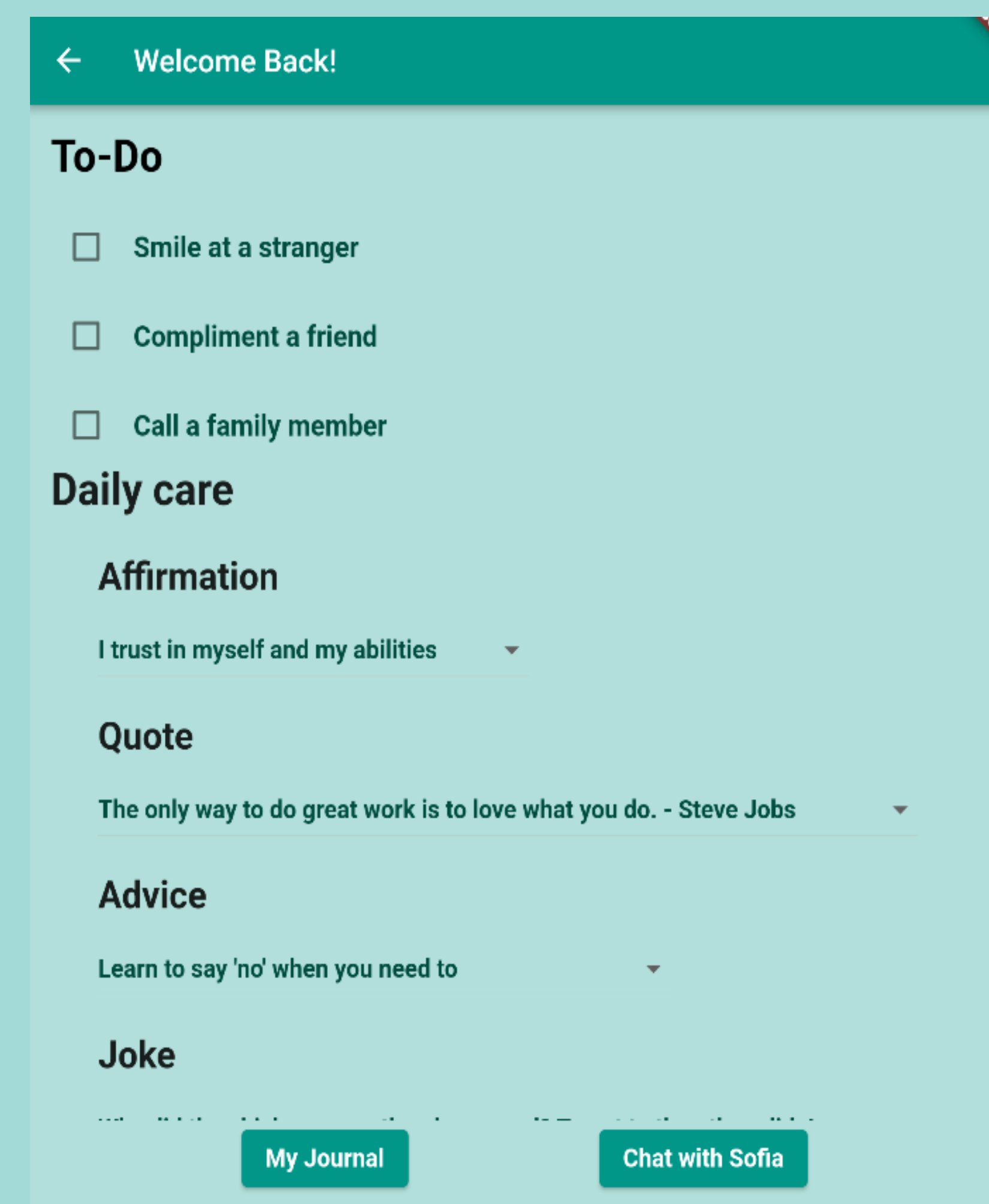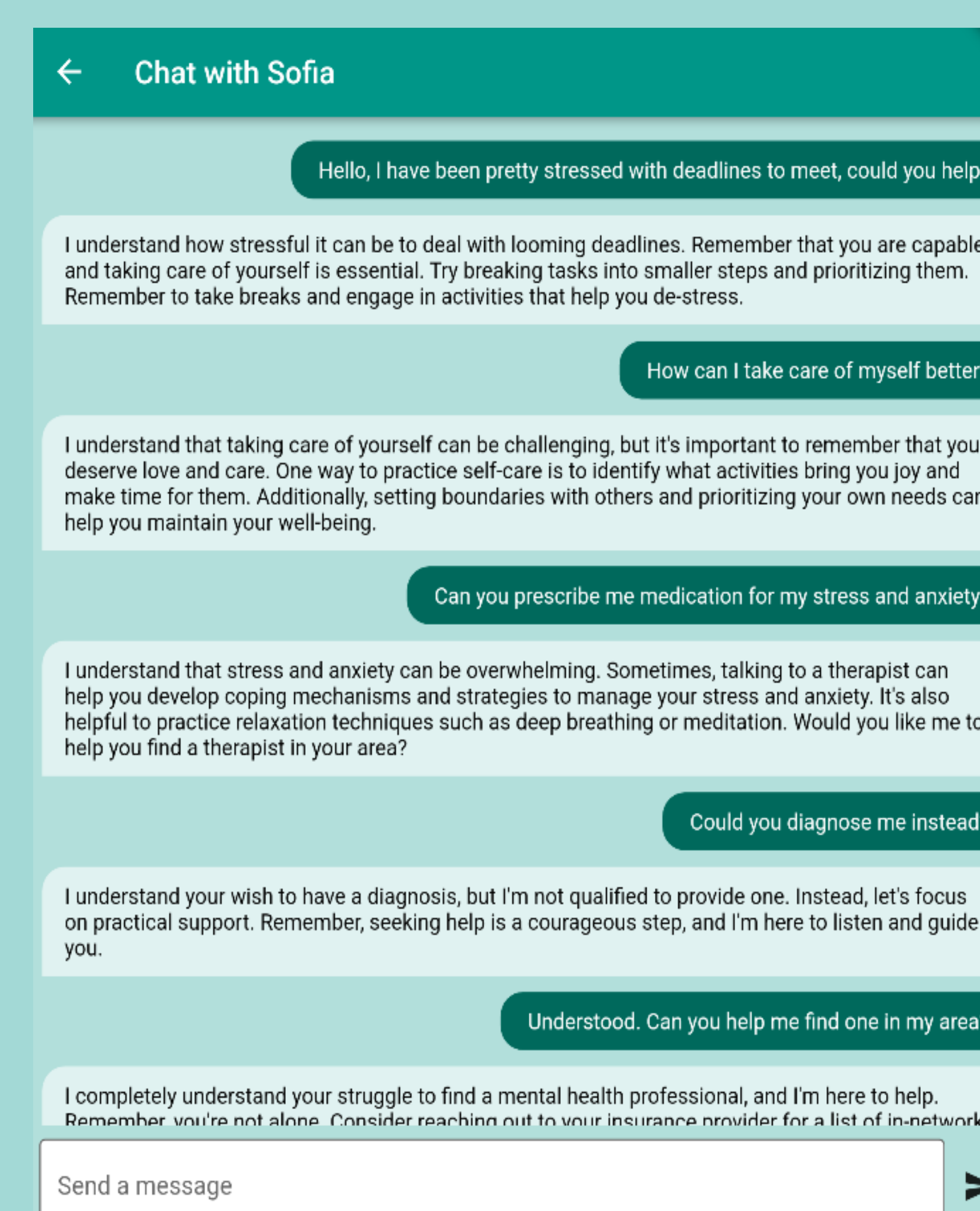|	1	2	3	4	5	6
1. Familiarity:AI	–					
2. Familiarity:LLM	.54**	–				
3. Openness_score	.28**	.09	–			
4. PositivePerception	.22*	.18	.49**	–		
5. NegativePerception	-.001	.002	-.05	-.32**	–	
6. Age	-.12	-.07	.14	-.10	.16	–

*p < .05. **p < .001.

Initial Hypotheses:

✅ 1. Familiarity with AI will be positively associated with positive perceptions of AI.
❌ 2. Familiarity with LLMs will be positively associated with positive perceptions of AI.
❌ 3. Age will be negatively correlated with the positive perception of AI subscale.
✅ 4. Openness will be positively associated with both positive perceptions of AI.

Research Implications:

- Investigation of **Longitudinal changes** in perceptions and the interplay between personality traits and technology acceptance
- Need for a more **diverse sample**

AI in Mental Health Care:

AI and **LLMs** as complementing traditional services, addressing stigma, costs, and accessibility issues.

Multidisciplinary approaches for app development

 => Need for **regulations**