Optimizing Wellbeing with Personalized Mindfulness Chatbot

Yiyi Wang & Norman AS Farb
Department of Psychology, University of Toronto Mississauga
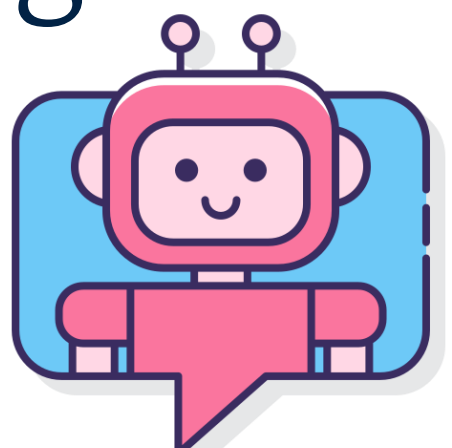
Background

Mindfulness-Based Approaches
Promoting mental health and wellbeing through present moment awareness.

Personalization in Digital Interventions
Enhancing user engagement and outcomes by tailoring content to individual preferences.

Chatbots in Mental Health
Innovating support through interactive, AI-driven conversational agents.

Chatbot Efficacy Gap
Examining the under-studied impact of chatbots on mental health support for students.

Research Questions

1. **Intervention Impact:** How do various mindfulness interventions, such as routine check-ins, user-selected materials, and a value-identification chatbot, affect wellbeing over time?

2. **Engagement and Autonomy:** How does participant engagement and autonomy in mindfulness training influence its effectiveness?

Hypotheses

1. Intervention > Control for Decentering, Reappraisal, & Wellbeing (Value > Choice > Control)
2. Mindfulness-to-Meaning Theory: Intervention groups promote Wellbeing through MMT rather than directly targeting Wellbeing

Methods

- **Design:** Multilevel randomized control trial
- **3 conditions:**
  - Control: check-in only; relaxation activities
  - Choice: choose skill; guided mindfulness practice
  - Value: identify life domain; guided practice
- **Participants:** Undergraduates (N=166); randomly assigned
- **Procedure**: 1 week: daily session (5min)
- **Outcome Variables**
- Daily Level (a total of 7 daily check-ins):
  - 1-item measures of Positive Mood, Negative Mood, Stress, Satisfaction, Awareness, Nonreactivity, Reappraisal, Meaningfulness, Autonomy, Competence, Relatedness
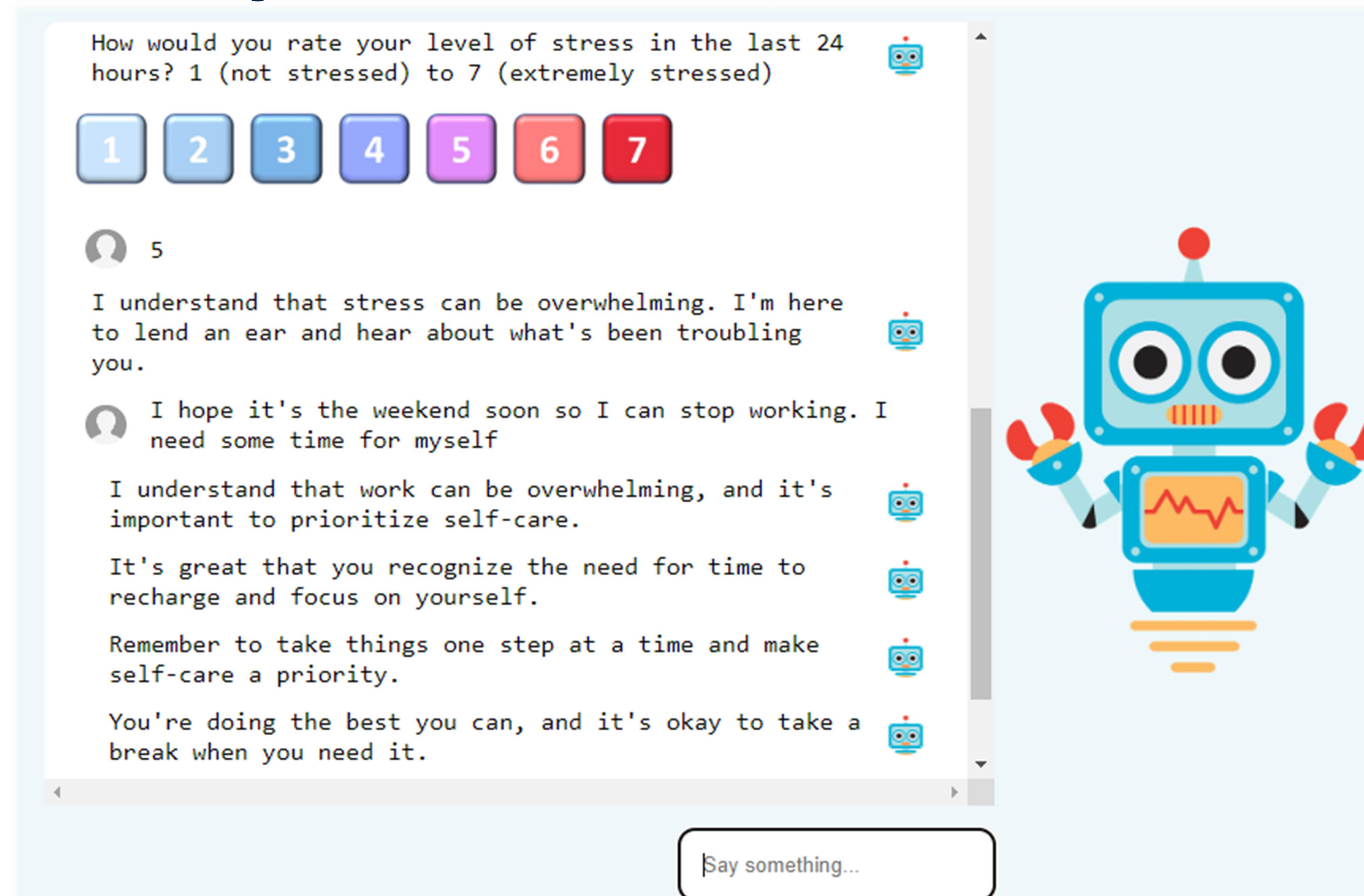

Results

1. **Decentering:** Choice group significantly improved Decentering compared to both Control and Value.
2. **Positive Mood:** Choice & Value significantly increased Positive Mood compared to Control.
3. **Stress**: Value significantly reduced Stress compared to Control.
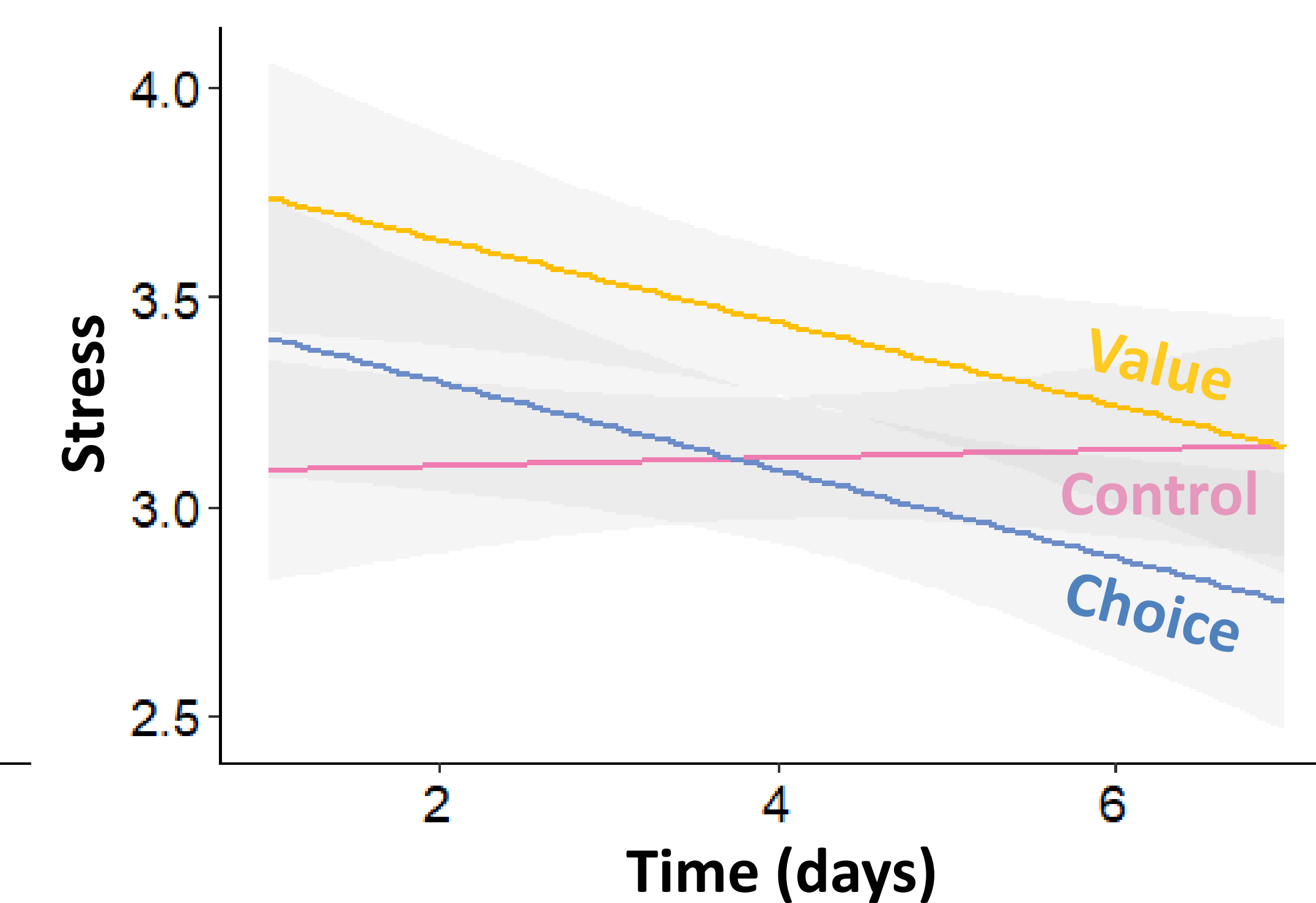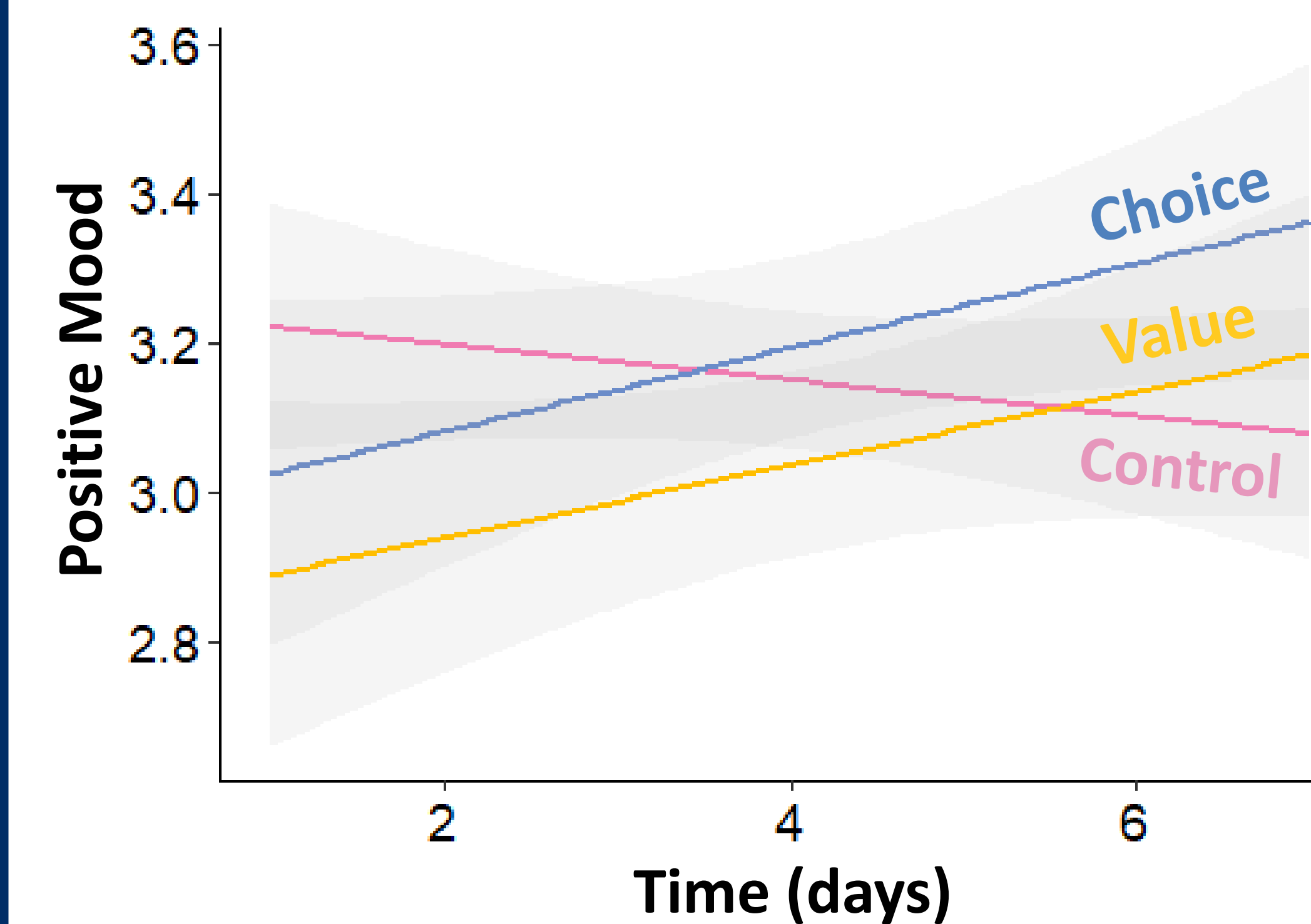
4. **Interventions and MMT:** Choice & Value significantly promoted Wellbeing through MMT compared to Control.
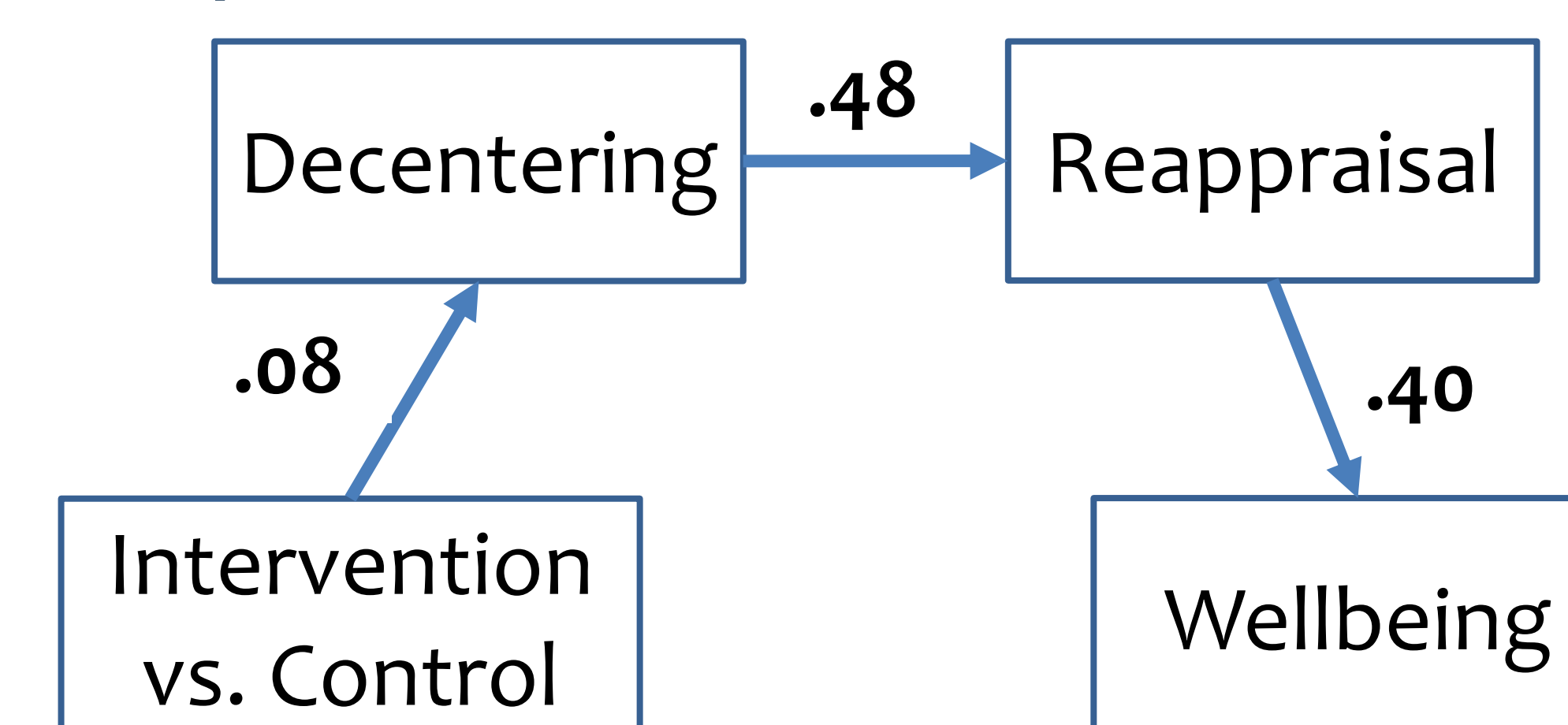
5. **Chatbot Feedback:**
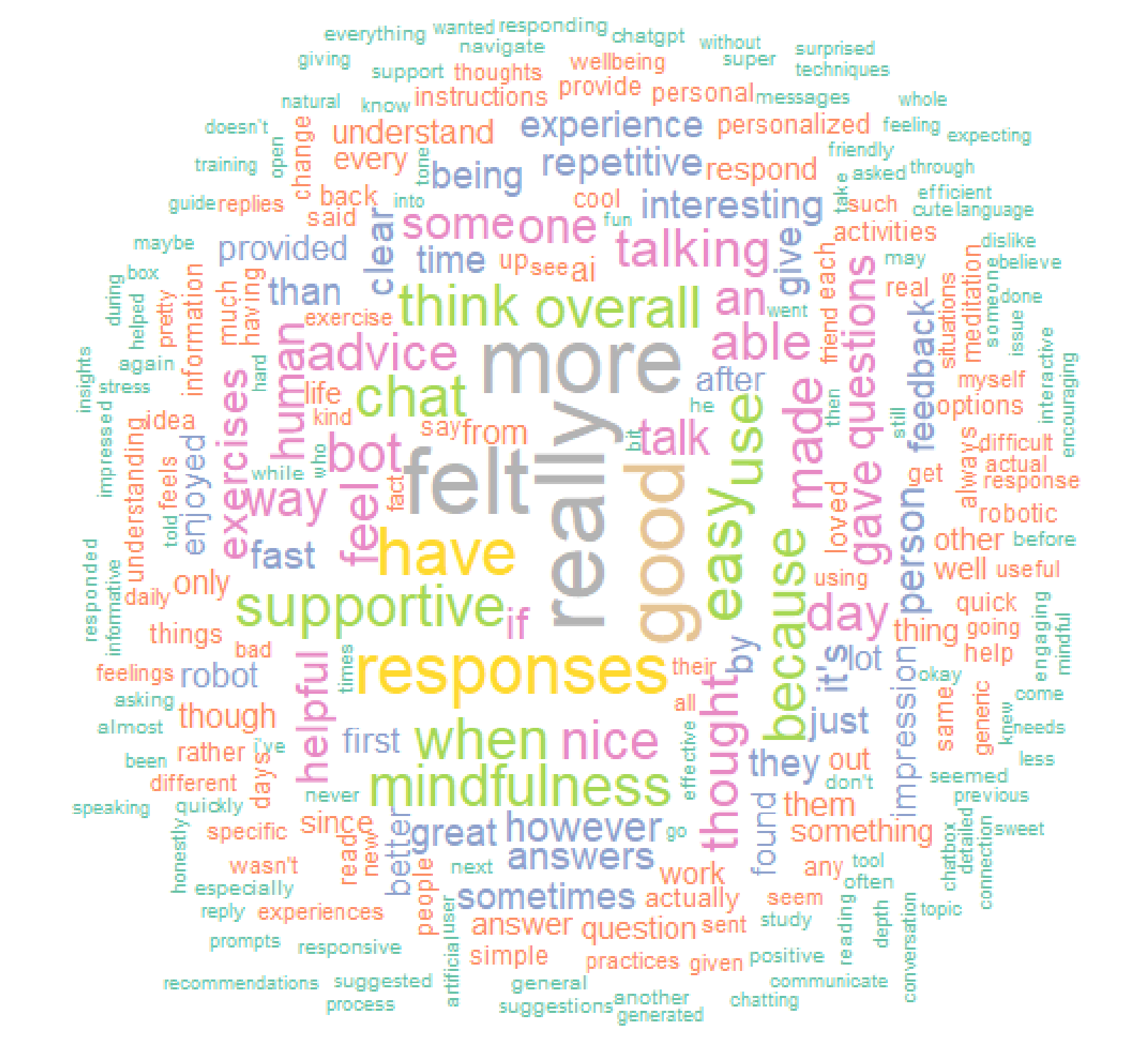
Conclusions

1. Highlight the importance of user autonomy and personalized guidance in online interventions.
2. Explore the potential of tailored chatbot-based interventions for the promotion mindful awareness and psychological wellbeing.
3. Limitation: Short duration; No chatbot-based control condition for comparison.