



# Prosocial Outcomes of Mindfulness for College Students in terms of Game Theory

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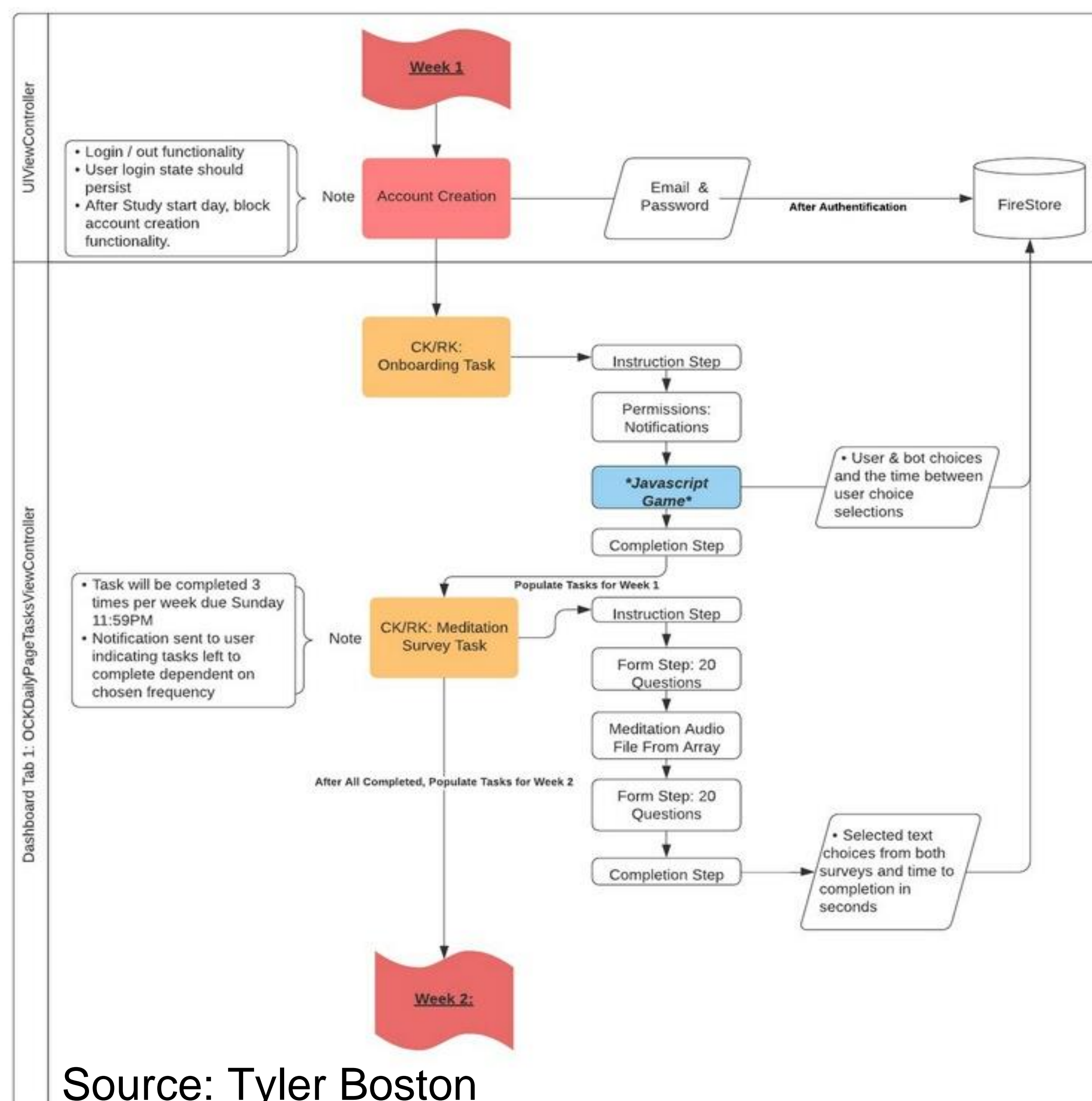
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## Introduction

- Mindfulness is a way of life that advocates for non-judgmental awareness and acceptance of both the internal and external self in the present moment (3). The incorporation of mindfulness and associated practices is increasing in public service fields such as healthcare and education (3 and 4).
- Mindfulness is correlated with sustained behavioral changes that suggest increased prosocial action, improved health, and overall positive life outlook (2).

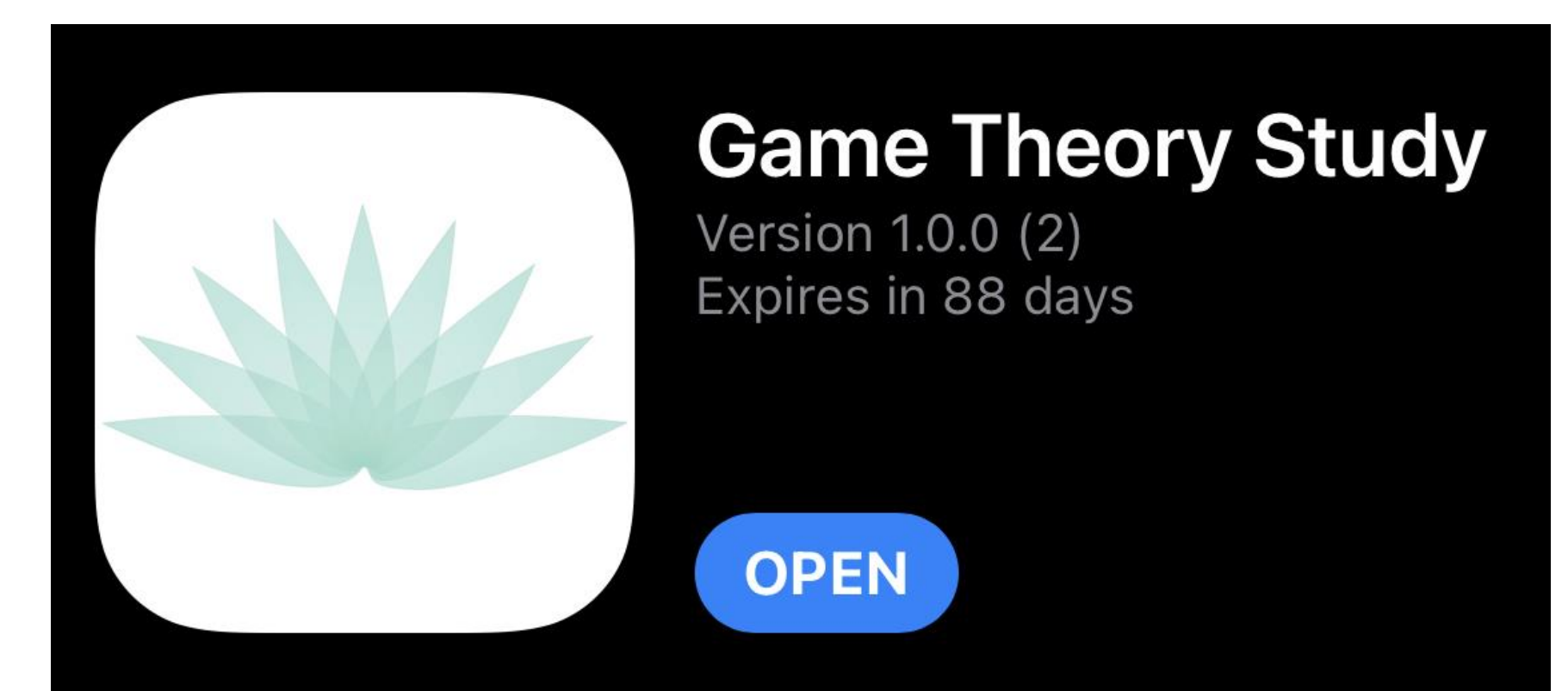
## Objective

Research is limited on the direct role of mindful meditations on social behavior (5). The proposed study will evaluate the role of loving-kindness meditations on interpersonal decision-making through a randomized controlled experiment with college students.



## Methods

- This study will be conducted, with the exception of recruitment, through an app developed in-house. This app will randomly assign participants to an 8-week meditation program, monitor weekly participation, and promote engagement through a token system.
- **Participants:** College students (17 – 23 years old)
- **Measurement Tools:**
  - Biometrics = ios Health app in conjunction with wearables
    - Heart Rate Variability and Breaths/Minute
  - Prosocial Behavior
    - The Evolution of Trust game
    - Survey
- **Program Assignments:**
  - Experimental: loving-kindness group
  - Active Control: mindful meditation group
  - Control: Unguided meditation group
- **Sample Schedule:**
  - Week 1: Participant recruitment, baseline biometric data collection, and pre-experiment Evolution of Trust game played
  - Week 2: Random Program Assignment and 1st Week of Meditations (Monitor participant experience and troubleshoot technical bugs; Compile baseline biometric data and record initial interpersonal decision-making data)
  - Week 3: 2nd Week of Meditations (Monitor participant experience and troubleshoot technical bugs; Compile week 2 biometrics and survey data)
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  - Week 9: 8th Week of Meditations (Monitor participant experience and troubleshoot technical bugs; Compile week 8 biometrics and survey data)
  - Week 10: Post-experiment Evolution of Trust game played; compile week 9 biometrics and survey data; complete data analysis
  - Week 11 - 13: Compare and analyze data from trial one and two; Evaluate findings for significant change in social behavior, physiological measurements, and/or neural stimulation



## Significance

- Changes to prosocial behavior could greatly benefit college students who experience chronic stress and as a result have deteriorating mental health and academic performance (1). In particular, the loving-kindness meditation—a mindful practice aimed at cultivating benevolence—is linked with the broaden-and-build theory of positive emotions in that the meditation leads to an increase in positive emotions such as compassion, contentment, and empathy (2).
- The biometrics will provide insight into the relaxation response and physiological changes associated with decision-making for participants.

## References

1. Bamber, M. D., & Kraenzle Schneider, J. (2016). Mindfulness-based meditation to decrease stress and anxiety in college students: A narrative synthesis of the research. *Educational Research Review*, 18, 1–32. <https://doi.org/10.1016/j.edurev.2015.12.004>.
2. Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open hearts build lives: Positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology*, 95(5), 1045–1062. <https://doi.org/10.1037/a0013262>.
3. Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10(2), 144–156. <https://doi.org/10.1093/clipsy.bpg016>.
4. Smith, B. H., Esat, G., & Kanojia, A. (2020). School-based yoga for managing stress and anxiety. *Promoting Mind-Body Health in Schools: Interventions for Mental Health Professionals.*, 201–216. <https://doi.org/10.1037/0000157-014>.
5. Sun, S., Yao, Z., Wei, J., & Yu, R. (2015). Calm and smart? A selective review of meditation effects on decision making. *Frontiers in Psychology*, 6. <https://doi.org/10.3389/fpsyg.2015.01059>