

Self-Efficacy App Study (SeApp): Feasibility in the Context of COVID-19

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COVID-19:

A Global Mental Health Crisis

On March 11th, 2020, WHO declared COVID-19 as a pandemic. While the virus has a direct impact on the body, its repercussions, including the extended period of self-isolation that has ensued, can negatively affect an individual's psychological wellbeing and daily functioning. College students are among the many whose lives have been drastically altered by the pandemic. Familial financial burden, difficulties in e-learning, and a lack of familiar routines have all contributed to their decreased levels of motivation and confidence in their personal and academic lives. We aimed to test the feasibility of a mobile phone app designed to boost users' self-efficacy in response to COVID-19 as a global mental health crisis.

What is Self-Efficacy?

Definition: Self-efficacy (SE) refers to an individual's belief in their ability to perform the necessary actions to manage particular situations and reflects confidence in the ability to exert control over one's own motivation, behavior, and social environment (Bandura, 1977).

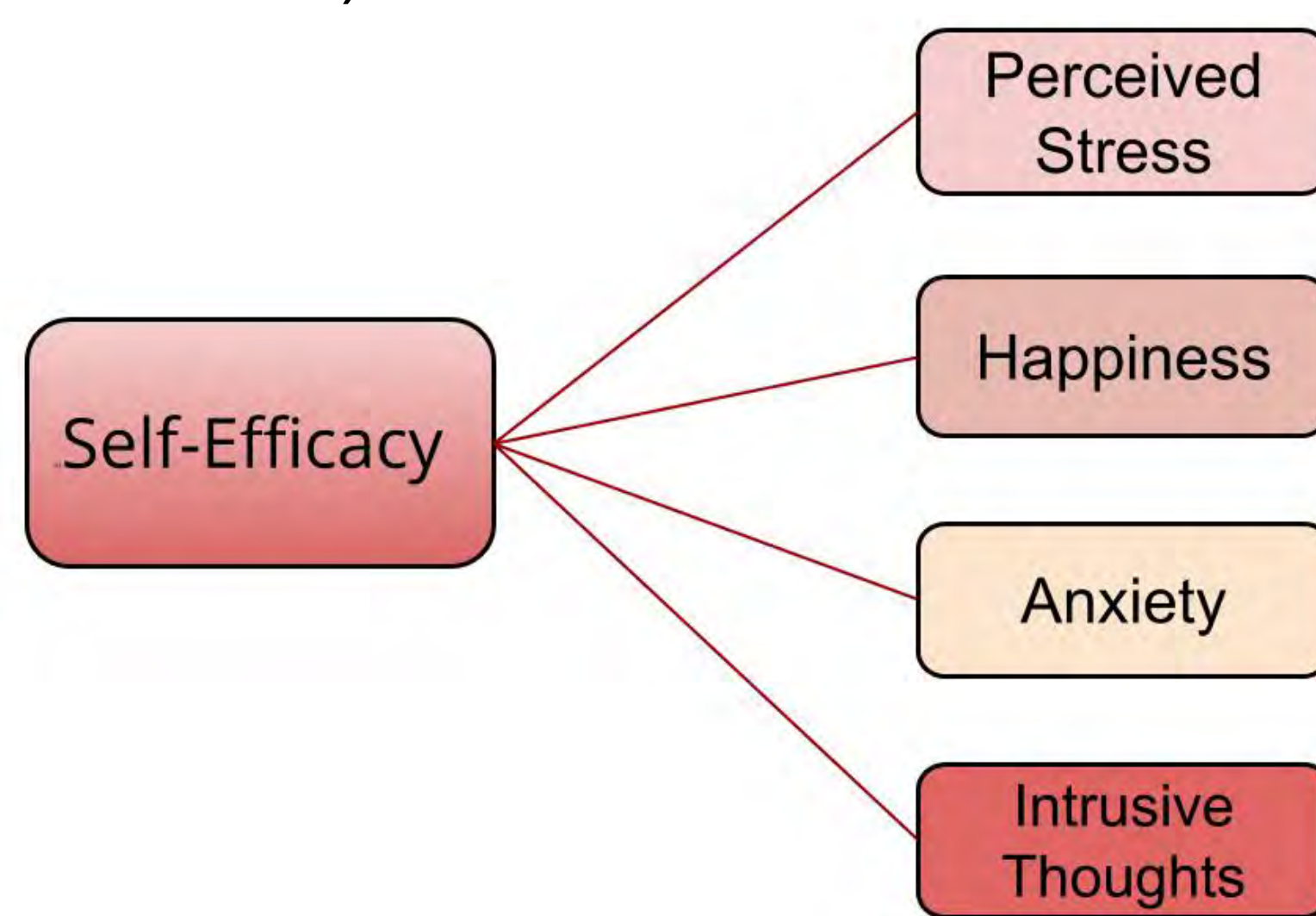


Figure 1 shows four major mental health well being factors measure in relation to SE in the pilot study

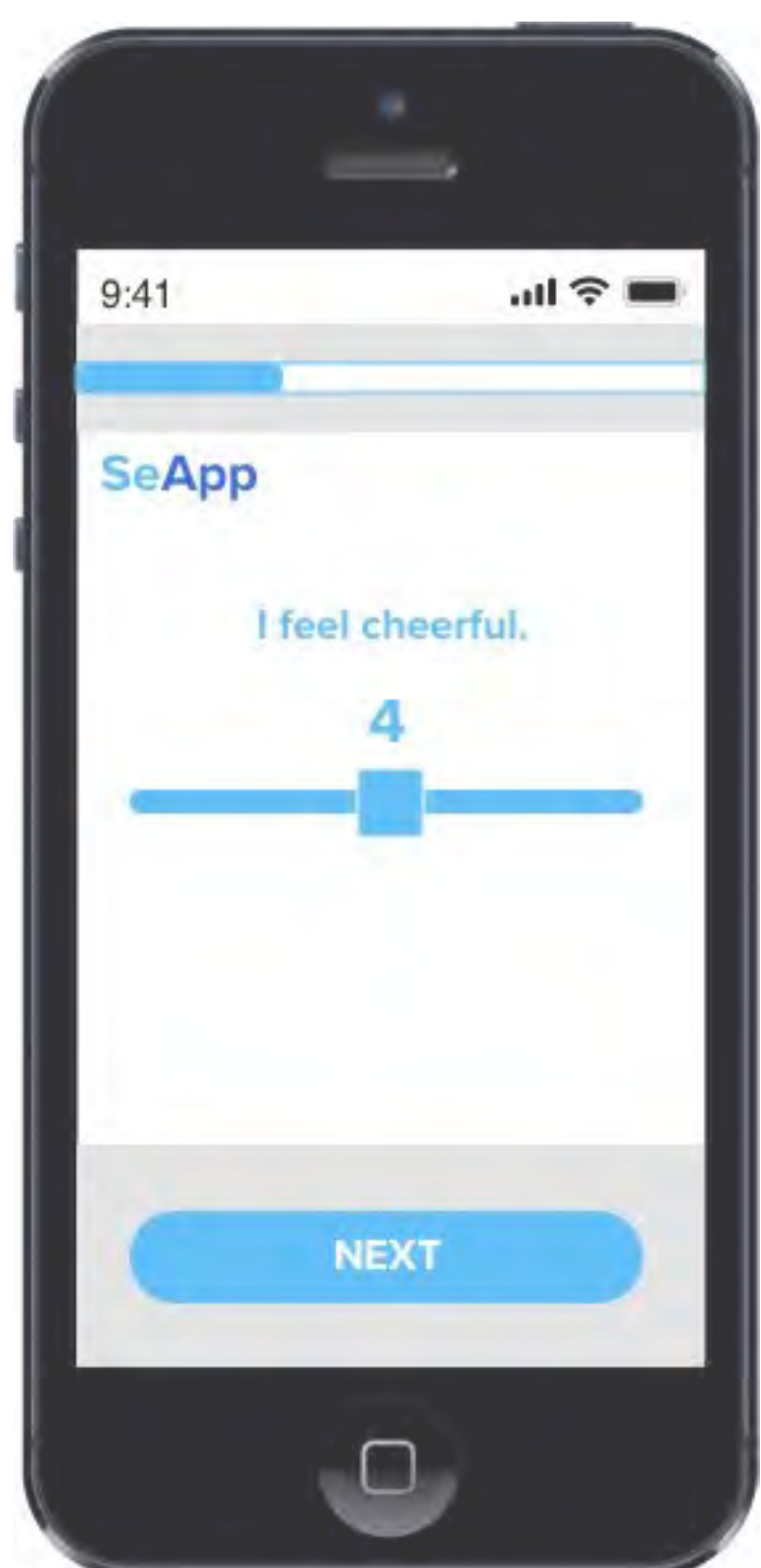
Methodology

SE Intervention guides participants in recalling a mastery experience through breathing exercises, visualization and imagination.

EMA(Ecological Momentary Assessment)

inquires participants about their current mood and with whom they are in virtual and physical contact with.

Pilot study and preliminary focus: Eleven students were recruited for a five-day pilot hosted on an online survey that included the same content from the SeApp. Participants completed a baseline assessment composed of the General Self Efficacy Scale (GSE, Schwarzer & Jerusalem, 1995) and the Perceived Stress Scale (PSS, Cohen et al., 1983).



All participants completed one set of the SE intervention prompts and EMA per day with specific questions inquiring their perceived self efficacy. Participants completed follow-up GSE and PSS measures at the end of the five-day span. For the full app study, more participants (both domestic and international) will be recruited for additional exploratory analysis.

Figure 2 shows an EMA question on SeApp

Data Analysis: Pilot Study

Autobiographical Memory of SE:

The final sample consisted of n=7 participants. Four of the seven participants noted academic success as their mastery experience. One considered "moving back to school" a challenge to overcome and two acknowledged the difficulties of virtual learning. The responses supported the study's aim to examine academic and personal stress regarding COVID-19 in the college sample.

EMA Analysis:

All but one participant reported being in both virtual and physical contact with others. All participants showed appreciation for the given companionship by selecting choices like "I feel appreciated" or "I feel like I fit in."

Figure 3 suggests a decrease in the percentage of participants feeling negative emotionality, like anxiety and stress over the five-day intervention. Notably, no participants reported having intrusive thoughts by the end of the fifth day.

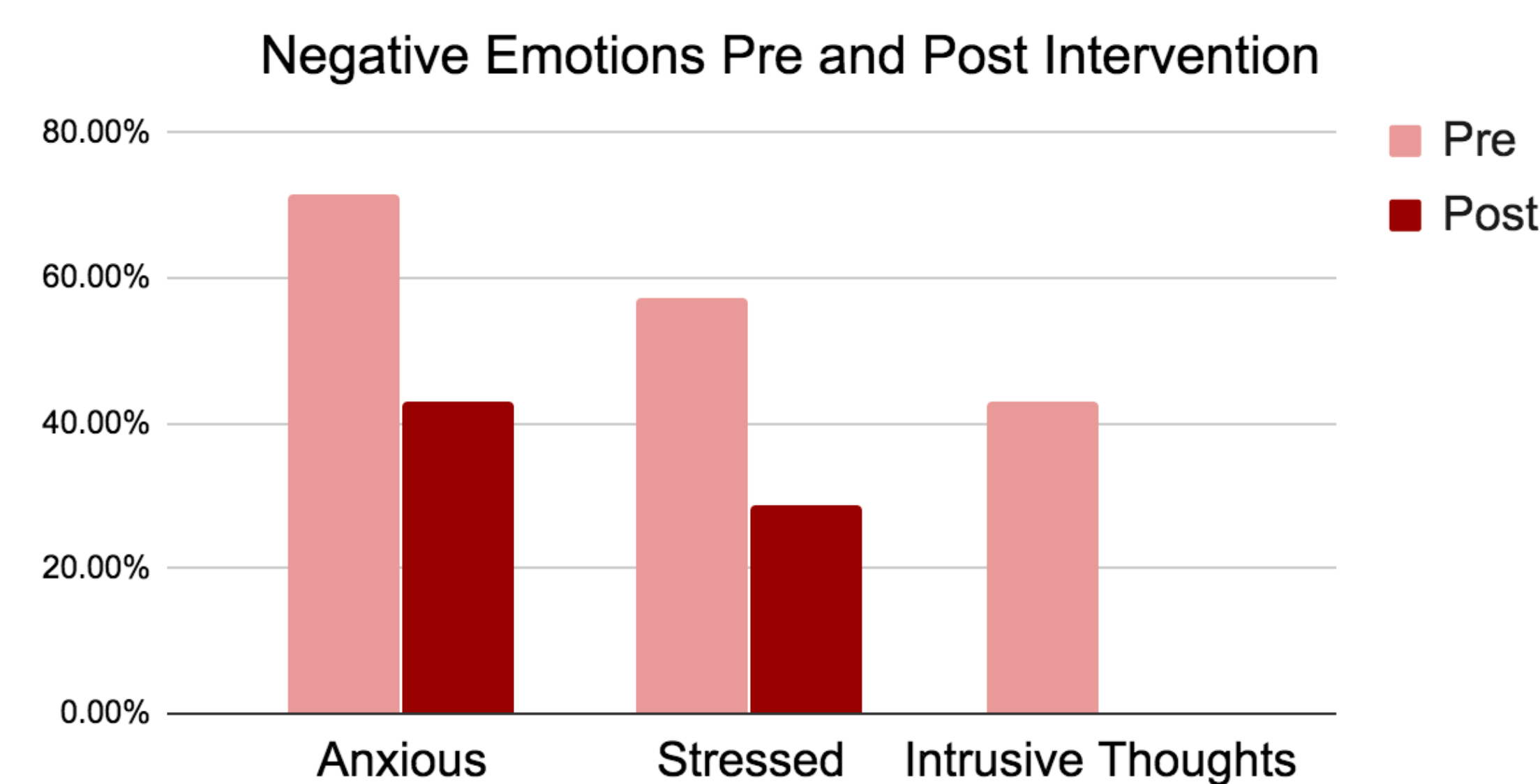


Figure 3: Percentage change in the number of participants choosing "very much" for negative emotions.

In contrast, Figure 4 shows an increase in the percentage of participants feeling positive emotionality, like cheerfulness and the ability to concentrate post-intervention.

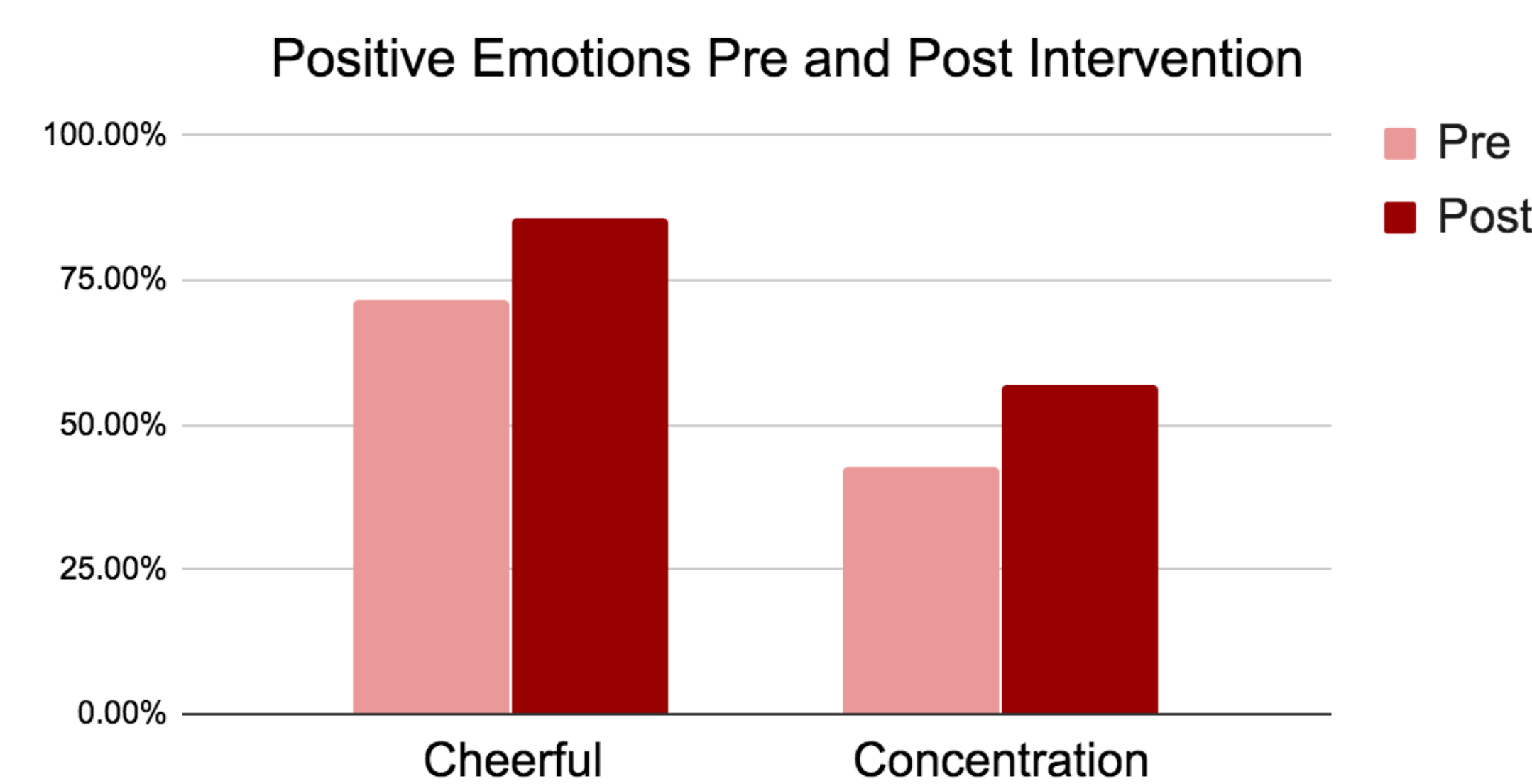


Figure 4: Percentage change in the number of participants choosing "very much" for positive emotions.

GSE and PSS breakdown:

A paired-sample t-test was conducted to compare GSE and PSS total scores pre and post intervention. There was not a significant difference in GSE scores pre ($M=28.00, SD=4.16$) and post ($M=28.71, SD=2.29$) intervention; $t(6)=.801, p=.454$. Similarly, no significant difference was found in PSS scores pre ($M=18.71, SD=3.35$) and post ($M=17.71, SD=3.15$) intervention either; $t(6)=-.661, p=.533$.

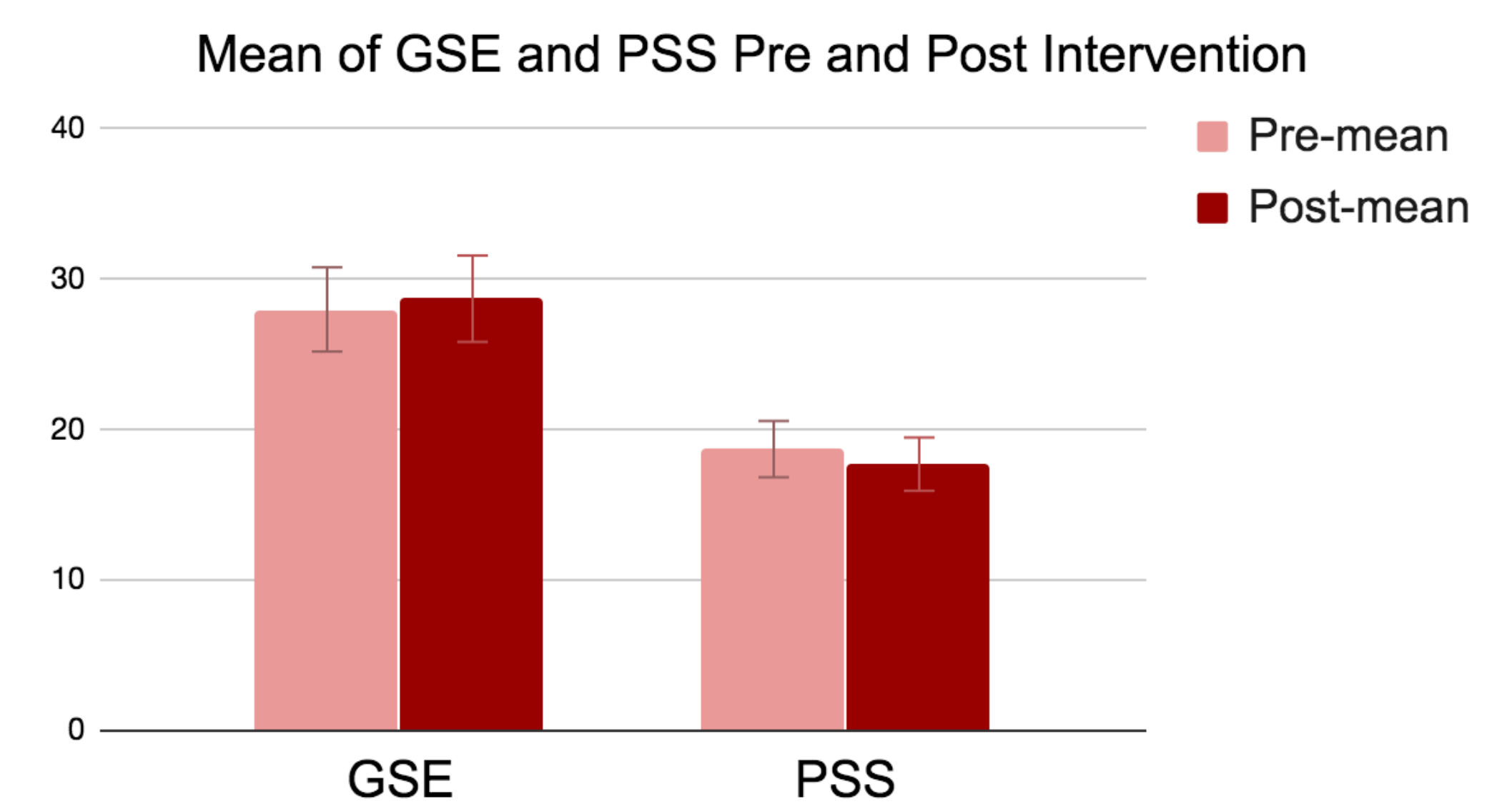


Figure 4 shows the changes in the mean of GSE and PSS pre and post intervention T1: Total Score Pre-Intervention; T2: Total Score Post-

Discussion

Considering the scope of the pilot study and the impact of baseline variability among participants, the lack of statistically significant changes in GSE and PSS over the course of five days is not surprising. Even so, the results demonstrate a decrease in perceived stress among participants. The lack of changes in GSE scores prompted us to reevaluate SE as a trait rather than a state. Notably, more participants reported feeling positive emotions and fewer negative emotions post-intervention. Especially in regards to intrusive thoughts, SE training seems to have effectively helped the seven participants "keep the thoughts out of their minds." This finding aligns with existing literature on how SE recollection can effectively reduce the intrusive recollections of aversive events, which in turn assist post-traumatic recovery. (Brown et al. 2012).

Limitation: Participants were only given binary options for EMA questions ("not at all" or "very much"). Thus, we expect to see a change pattern in mood assessment when emotions are rated on a 7-point Likert scale in the full study. Additionally, the pilot study did not include a no-treatment group that could control for potential confounds, such as general adaptation to challenges over time, which we plan on addressing in the full app study as well. In conclusion, the pilot study affirmed our determination in proceeding with the full app study.

Acknowledgements + References

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