Introduction

- Episodic future thinking (EFT) is the ability to vividly imagine one’s personal future\(^1\)
- Interventions where participants engage in EFT have decreased delay discounting (DD), the decision to take a smaller reward sooner, rather than a larger, delayed reward – a phenomenon which is associated with multiple health behaviors
- Episodic recent thinking (ERT) is the vivid imagining of events that took place in one’s recent past and is a common control in EFT intervention studies
- It has been hypothesized that ERT could lead participants to personal future projection as some of the same brain regions are involved in both retrospection and prospection\(^2\)
- This study investigated the efficacy of a new episodic recent thinking control that standardized the participant’s recent memories to eliminate the potential for personal prospection (ERT\(_5\))

Methods

RECRUITMENT

- Participants were recruited using flyers and the Division of Behavioral Medicine database
- Potential participants completed an online eligibility screening on SurveyMonkey

EXCLUSION CRITERIA

- Depression and psychopathology
- Tobacco, drug, and alcohol use >10 drinks/week
- Prior participation in similar studies
- One-item discounting measure\(^3\)

PARTICIPANTS

- N = 40, adults 18 – 45
- One statistical outlier was excluded
- Participant characteristics are summarized in Table 1 by group

RANDOMIZATION

Participants were randomly assigned to one of three groups:

- Episodic future thinking (EFT)
- Episodic recent thinking (ERT)
- Standardized episodic recent thinking (ERT\(_5\))

Methods cont.

MEASURES

- Demographics (e.g. race, age, sex)
- Time perspective (Consideration of Future Consequences Scale)
- 6-item food insecurity questionnaire
- Perceived stress scale
- Delay discounting - adjusting amount discounting task with fixed smaller immediate reward and tilting larger reward in the future\(^4\)

Data Analysis

- One-way analysis of variance (ANOVA) was used to test for differences of continuous variables and Chi-Square was used to check for differences in dichotomous variables
- ANOVA and linear contrasts were used to compare overall between group differences in area under the curve (AUC) values

Results

- No between-group differences were found for demographic variables (Table 1)
- Between groups ANOVAs showed that groups significantly differed in delay discounting, as measured by the area under the curves values (Figure 1)
- There was a main effect of EFT on discounting (F(2.38) = 3.86, \(p = 0.03\)), such that the EFT group showed less discounting of the future than the ERT and ERT\(_5\) groups

Results cont.

- Linear contrasts showed that the EFT group discounted the future less than the ERT group (F(1,24) = 6.43, \(p = 0.02\)) and the ERT\(_5\) group (F(1.25) = 5.15, \(p = 0.03\))
- The ERT\(_5\) group and the ERT group did not differ (F(1.25) = 0.10, \(p = 0.76\))

Figure 1. Area-Under-Curve by Group

Table 1. Participant Characteristics by Group (N = 40)

<table>
<thead>
<tr>
<th></th>
<th>EFT (n = 13)</th>
<th>ERT (n = 13)</th>
<th>ERT(_5) (n = 14)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Mean ± SE, years)</td>
<td>30.1 ± 2.3</td>
<td>29.5 ± 2.3</td>
<td>28.4 ± 2.2</td>
<td>.87</td>
</tr>
<tr>
<td>Income (Mean ± SE, $)</td>
<td>69 ± 17</td>
<td>79 ± 17</td>
<td>59 ± 16</td>
<td>.66</td>
</tr>
<tr>
<td>Education (Mean ± SE, years)</td>
<td>14.7 ± .56</td>
<td>15.1 ± .56</td>
<td>13.9 ± .54</td>
<td>.33</td>
</tr>
<tr>
<td>Sex (n,%):</td>
<td>8(76.92%):</td>
<td>9 (69.23%):</td>
<td>9 (64.29%)</td>
<td></td>
</tr>
<tr>
<td>Female:</td>
<td>2(16.66%):</td>
<td>2 (15.38%):</td>
<td>2 (14.29%)</td>
<td>.77</td>
</tr>
<tr>
<td>Male:</td>
<td>3 (23.08%):</td>
<td>3 (23.08%):</td>
<td>2 (14.29%)</td>
<td>.27</td>
</tr>
<tr>
<td>Minority status (n, %):</td>
<td>2 (15.38%):</td>
<td>3 (23.08%):</td>
<td>6 (42.86%)</td>
<td></td>
</tr>
<tr>
<td>Minority:</td>
<td>10 (76.92%):</td>
<td>6 (46.15%):</td>
<td>8 (57.14%)</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion

- EFT improves DD, even among a highly impulsive sample – a result which is consistent with previous studies
- This study establishes the validity of using a standardized ERT control that focused participants on the recent personal experience of playing mobile application games in the lab
- The novel control may eliminate the potential prospective element of personalized ERT

References


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