Effects of Domain-Specific Episodic Future Thinking on Delay Discounting in Regular Cannabis Users

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Introduction

- Potency (AP-THC) and prevalence of cannabis use and Cannabis Use Disorder (CUD) are rising and are linked to poorer mental health, cognitive, and decision-making outcomes (Cream et al., 2011; Hasin et al., 2016; Kim-Spanos et al., 2019; Petker et al., 2019).
- Treatment seeking is common and effective, but many don’t respond. Understanding cognitive and decision-making vulnerabilities with cannabis use and misuse may inform treatments. Examples include targeting cognitive and decision-making deficits associated with cannabis misuse.

Method

- **Recruitment:** 90 participants recruited via crowdsourcing platforms (Amazon mTurk, Qualtrics Panels)
- **Inclusion:** >99 lifetime cannabis use days, >9 days of use in past month, DD > .73.
- **Baseline** (Day 1)
  - **Timeline Follow-Back (TLFB)** assessed days of use and daily grams used in past week
  - **Measures:** DD and Hypothetical Purchase Task (Demand) - joints of cannabis
- **Intervention (Day 2): Randomization to ERT, EFT, or DS-ERT**
  - **All participants received ESI, followed by the ERT, EFT, or DS-ERT training**
- **Follow-up (Day 9)**
  - **Measures:** TLFB, DD
- **Analyses**
  - Structural equation modeling (SEM) used to examine change in DD as a mediator of relationship between intervention group and change in cannabis use and to examine latent change in total grams and days of cannabis use (baseline week vs. follow-up week

Results

- **Continuous (M, SD) Overall**
  - **Cannabis**
    - Days of Use (Past 30) 7.1 (6.6) 7.4 (6.6) 6.5 (5.6) 8.1 (8.8)
  - **TimeDay**
    - 3.1 (3.4) 2.4 (2.6) 2.3 (3.4) 2.3 (3.4)
  - **Alcohol**
    - Days of Use (Past 30) 2.1 (4) 2.1 (3) 2.1 (3) 2.1 (3)
  - **Nicotine**
    - Days of Use (Past 30) 7.3 (7) 7.3 (7) 7.3 (7) 7.3 (7)
  - **TimeDay**
    - 6.2 (7) 6.2 (7) 6.2 (7) 6.2 (7)
- **Categorical (n, %)**
  - **CUD (any)**
    - 40 (44) 18 (51) 11 (32) 11 (32)
  - **Gender**
    - 35 (39) 14 (40) 8 (23) 15 (45)
  - **Level of Education**
    - 62 (69) 21 (60) 20 (57) 22 (72)
  - **Employment**
    - 53 (59) 18 (51) 17 (50) 17 (50)
  - **Full-time**
    - 11 (12) 3 (9) 4 (13) 4 (13)
  - **Unemployed**
    - 50 (55) 16 (47) 14 (42) 10 (30)

Conclusions

- DD and total grams of cannabis use were reduced in DS-ERT relative to traditional EFT and ERT (moderate to large effect) despite a generally low desire to reduce cannabis use.
- Change in cannabis use was mediated by DD, nor were there group differences
- ESI may have reduced DD across groups
- These findings suggest that DS-ERT may reduce cannabis use via a construct(s) other than DD
- Immediately after the training, both EFT and DS-ERT groups reported greater quality (more enhanced episodic thinking) of events than the ERT group, but the DS-ERT training may have produced a more generalized enhancement of episodic thinking which may have resulted in the observed reduction of cannabis use in the DS-ERT group.

Acknowledgements

Research supported by the National Institute on Drug Abuse grants P30-DA029926 and T32-DA037022