Coping with Cannabis Craving: Development of a Digital Intervention

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Introduction

- Cannabis use has increased over recent decades while the perceived risks of use are decreasing (Schulenberg et al., 2020)
- Greater quantity and frequency of cannabis use is associated with more cannabis-related problems such as psychological distress, loneliness, detrimental effects on memory, and adverse effects on areas of the brain associated with reward (Volkow et al., 2016; Budney et al., 2019; Battisti et al., 2010; Rhee et al., 2020; Gilman et al., 2016; Dumont et al., 2011)
- Craving is a predictor of cannabis use. Coping with cravings may be critical for reducing use (Enkema et al., 2020; Enkema et al., 2021; Buckner et al., 2016)
- Mindfulness: Maintaining attention on an immediate experience while adopting an accepting and curious perspective
  - Prevent relapse of alcohol use (Bowen et al., 2014; Witkiewitz et al., 2014)
  - Reduces relationship between craving and use (Enkema et al., 2020; Garlant et al., 2020)
- Distraction: Engage with an alternative activity to direct attention away from the craving experience
  - Mixed results (Enkema et al., 2020; Garland et al., 2016)
  - May outperform mindfulness (Murphy & McKillop, 2014)
- Craving is time-varying. Digital interventions may push support when craving is high. (Albertella et al., 2019; Enkema et al., 2020; Spears et al., 2019; Witkiewitz et al., 2014)
- The purpose of this study was to develop a bank of 20 messages consisting of mindfulness and distraction strategies for coping with cannabis cravings to be used in a digital intervention to help young adults cope with cravings as they try to reduce their cannabis use.

Methods

Participants
- Young adults (19-25 y/o)
- Used cannabis ≥10 days/past 30 days

Message Banks
- Developed initial bank of 30 messages with strategies for coping with cannabis cravings
  - 15 mindfulness messages from Witkiewitz et al. (2014) and Spear et al. (2019)
  - 15 distraction messages from Guarino et al. (2018)

Surveys
- Initial bank of 30 messages sent to participants for feedback; rated again after messages were revised
  - Each message rated (1 = strongly disagree; 4 = strongly agree)
    - This message is easy to understand
    - This message is useful
    - This message has a good overall tone
  - Free-response comments

Investigators revised messages using quantitative and qualitative feedback
- Any message with a comment suggesting an improvement

Selected top 10 messages of each category after second round of feedback
- Calculated average rating for each message across all three domains to rank messages

Analyses
- Conducted in SPSS v.26:
  - Two-tailed t-tests

Results

Mindfulness
- Ratings on message tone improved following message revisions (t (17) = 2.64, p = 0.017)

Distraction
- Ratings on message usefulness improved following message revisions (t (17) = 2.52, p = 0.022)

Example Feedback

<table>
<thead>
<tr>
<th>Feedback Category</th>
<th>Feedback Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward</td>
<td>Last sentence could reverse: “you don't need to act on any urges you may feel to use cannabis.”</td>
</tr>
<tr>
<td>Clarity</td>
<td>Had to read over a second time to understand the message.</td>
</tr>
<tr>
<td>Too difficult to implement</td>
<td>This may be true, but it's very hard to implement in real life. Message doesn't provide a good strategy to use this method into.</td>
</tr>
<tr>
<td>Non-judgmental</td>
<td>This perspective feels empathic &amp; helpful.</td>
</tr>
<tr>
<td>Rationale</td>
<td>But why? What's the benefit.</td>
</tr>
<tr>
<td>Triggering</td>
<td>As I said before, music tends to be more enjoyable when high. I think it is still effective, but it also may make the person want to use cannabis before zeroing in on his or her favorite song.</td>
</tr>
<tr>
<td>Not helpful</td>
<td>Vague and not particularly helpful.</td>
</tr>
</tbody>
</table>

Discussion

- Content of messages significantly improved over the course of this formative process.
- The community identified possible triggers embedded in the messages that may have been counterproductive to our intervention.
  - These triggers would not have been identified without the participants' lived experience and their inclusion in the message development.
- Triggers included suggestions to listen to music which may be enhanced by use of cannabis, and browsing social media as a distraction which may include cannabis-related imagery
- The findings of this study support the importance and highlight the value of including the target intervention population in the formative process of intervention development.
  - Sometimes, open-ended participant feedback comments were somewhat unclear and having the opportunity to have an ongoing discourse could help develop messages further (e.g., through use of live focus groups).
  - The final 10 mindfulness and 10 distraction messages developed in this study did not differ significantly from each other in terms of their ratings and were subsequently used in a pilot intervention aiming to provide young adults who use cannabis with support for coping with their cannabis cravings as they attempt to reduce their use.