Isolating Mechanisms in the Treatment of Borderline Personality Disorder

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Evidence-Based Care for BPD

• Evidence-based treatment for BPD is typically long-term, intensive, and consists of multiple components
Evidence-Based Care for BPD

• Shorter, cognitive-behavioral interventions have also been developed and tested in individuals with BPD

• These treatments also consist of multiple skills making it impossible to identify active ingredients in treatment

Mechanism Focused Treatment

How do we make treatment more potent and efficient?

• Ensuring that each skill included in a given treatment package engages the target mechanism (and removing skills that don’t)

• Emotion Dysregulation considered key
  • Reactivity
  • Intensity
  • Slow return to baseline
Engaging the Target Mechanism

Opposite Action

- Associated with basic science going back to Darwin suggesting “the most fundamental way to change an emotion is to change the action tendency associated with it” (Barlow, 1988)
- Included in leading treatments for BPD (Dialectical Behavior Therapy) and for emotional disorders more broadly (countering emotion driven behaviors in the Unified Protocol)

Opposite Action

Decreased Emotional Intensity

Single-Case Experimental Design

- Cost-Effective method for testing mechanisms
  - Within subject design in which a single individual serves at their own control

- Alternating Treatment Design (ATD)
  - Rapidly alternates two experimental conditions within an individual

- Multiple Baseline Design
  - Baseline assessment period serves as control condition
Lab study to explore whether opposite action leads to a reduction in emotional intensity using an Alternating Treatment Design (ATD)

<table>
<thead>
<tr>
<th>Mood Induction Condition</th>
<th>Coping Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Session 1</td>
</tr>
<tr>
<td>ANGER (n = 4)</td>
<td>Consistent</td>
</tr>
<tr>
<td>ANXIETY (n = 4)</td>
<td>Opposite</td>
</tr>
<tr>
<td>SADNESS (n = 4)</td>
<td>Opposite</td>
</tr>
<tr>
<td>SHAME (n = 4)</td>
<td>Consistent</td>
</tr>
</tbody>
</table>


Anger:
- Opposite: relaxed posture, yoga, tell a humorous story, tell the story from the “other side,” brainstorm a list of kind things to do for family and friends
- Consistent: Clench your fists/jaw, tear up pieces of paper vent to the researcher, pace around the room

Sadness:
- Opposite: Get moving (jumping jacks, go for a walk around the block), listen to an upbeat song, make plans for the weekend
- Consistent: Put your head down on the table, listen to sad music, spend some time thinking about the causes and consequences of the event

Phase II Goal: To explore whether an intervention designed to counter emotion-driven behaviors actually decrease their frequency?

**Multiple baseline design**
- Participants (N = 8) randomized to 2 or 4-week assessment only baseline periods
- All participants complete a 4-week Countering emotion-driven behaviors intervention (specific module from the Unified Protocol)
- All participants complete a 4-week follow-up period
- Across all study phases, participants complete daily measures of emotional experiences and behaviors

**Daily Data:**
- How many emotions did you have since the last assessment?
- What did you do in response?
  - Write in section
  - Forced choice categories that represented adaptive and maladaptive responses

**Weekly Data**
- BPD symptoms: ZAN-BPD
- Depression: ODSIS
- Anxiety: OASIS
- Negative Affectivity: PANAS-NA

**Group-Based Effects in Multiple Baseline Design**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Baseline M</th>
<th>Baseline SD</th>
<th>Treatment M</th>
<th>Treatment SD</th>
<th>d_0</th>
<th>95% CI</th>
<th>Follow-Up M</th>
<th>Follow-Up SD</th>
<th>d_0</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZAN-BPD</td>
<td>9.59</td>
<td>4.71</td>
<td>7.41</td>
<td>5.46</td>
<td>0.28*</td>
<td>(0.01, 0.57)</td>
<td>7.12</td>
<td>5.78</td>
<td>0.35*</td>
<td>(0.07, 0.62)</td>
</tr>
<tr>
<td>ODSIS</td>
<td>5.25</td>
<td>3.85</td>
<td>3.46</td>
<td>3.41</td>
<td>0.51*</td>
<td>(0.03, 0.98)</td>
<td>3.29</td>
<td>4.12</td>
<td>0.49*</td>
<td>(0.05, 0.92)</td>
</tr>
<tr>
<td>OASIS</td>
<td>6.94</td>
<td>4.23</td>
<td>6.59</td>
<td>4.15</td>
<td>0.14</td>
<td>(-0.19, 0.46)</td>
<td>5.10</td>
<td>3.67</td>
<td>0.49*</td>
<td>(0.10, 0.88)</td>
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<tr>
<td>PANAS-NA</td>
<td>23.21</td>
<td>7.15</td>
<td>21.00</td>
<td>9.44</td>
<td>0.29</td>
<td>(-0.07, 0.64)</td>
<td>19.93</td>
<td>7.95</td>
<td>0.45*</td>
<td>(0.02, 0.89)</td>
</tr>
</tbody>
</table>

Note: M = Mean of all observations within each phase; SD = Standard deviation; d_0 = baseline vs treatment effect size; d_0 = baseline vs follow-up effect size; CI = confidence interval
• Opposite action in a lab setting engages target mechanism of emotional intensity when patients feel sad and guilty

• A discrete opposite action intervention leads to reductions in the frequency of maladaptive, avoidant behavior (core mechanism), as well as improvements in BPD, depressive, and anxiety symptoms and decrease negative affectivity

Assessing Opposite Action using Single-Case Experimental Design

Advantages to using Single-Case Experimental Design

• Treatment outcome research need not be conducted only in the context of large, costly RCTs
• NIMH is funding treatment development research based on the experimental therapeutics initiative that:
  1. Demonstrates that a given strategy can engage a target mechanism
  2. Demonstrates that that strategy can be affected through treatment
• Single case experimental design is a cost-effective way to address these priorities
Thank you and Questions

- David Barlow, Ph.D.
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