Improvement for Youth with Disruptive Behaviors Provided Evidence-Based Practices

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Study Purpose
- Examine rate of functional improvement for youth receiving intensive-in home services (IIH) through the State of Hawaii's Child and Adolescent Mental Health System (CAMHD)
- Examine extent to which the use of therapeutic practices derived from the evidence-based literature affects this rate of improvement.

The Two Worlds of EBS and SOC
- Evidence-Based Practice (EBS)
  - High scientific standards, randomized control trials
  - Manualized approach tied to specific disorders
  - Often restricted samples of youth
  - Often university-based, by developers with students
- System of Care (SOC)
  - Services to youth and families with complex challenges
  - Providers with various levels of experience, backgrounds and orientations
  - More focus on youth level of functioning than specific symptom reduction

Distillation and Matching Model (DMM) (Chorpita, Daleiden and Weiss, 2005)
- Distillation
  - Identifying therapeutic elements within empirically supported treatment packages
- Matching
  - Identifying client, setting and other factors in studies of efficacious treatments that might be relevant for selection of intervention
DMM and Related Research

- Common Elements across Efficacious Treatments (Chorpita and Daleiden, in press)
- Modular CBT
- Child STEPS Treatment Project (Youth Network on Children's Mental Health: Borntrager et al, in press)
- The Present Study

Present Study

- Using required monthly reports from therapist on practices provided (MPTS)
- Using care coordinators’ quarterly ratings of youth functional status (CAFAS)
- Identify whether greater application of evidence-based practices (EBS-PEs) affects average rate of improvement for youth with a disruptive behavior disorder (DBD)

Youth Characteristics (N = 197)

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>13.04</td>
<td>3.49</td>
</tr>
<tr>
<td>N of Diagnoses</td>
<td>2.48</td>
<td>0.75</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>129</td>
<td>65.5</td>
</tr>
<tr>
<td>Females</td>
<td>68</td>
<td>34.5</td>
</tr>
<tr>
<td>Comorbid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>19</td>
<td>9.6</td>
</tr>
<tr>
<td>Yes</td>
<td>178</td>
<td>90.4</td>
</tr>
</tbody>
</table>

Measures-MTPS

- Monthly report from contracted providers
  - Practice settings & amount
  - Treatment targets and progress on these targets
  - Specific therapeutic practices (PEs)
- Prior and ongoing reliability and validity studies look positive (Daleiden, Lee and Tolman, 2004; Nakamura et al, 2007)

Measures-MTPS

- Identified every practice element (distilled from a treatment protocol for DBD that was judged efficacious based on CAMHD Evidence-Based Committee 2007 Biennial Report (available via CAMHD Web-page)
- Calculated the number of EBS-PEs per MTPS

Measuring “EBSness” of Practice Elements
Measures-CAFAS (Hodges, 1998)

- Care coordinators identify specific behavioral indicators that reflect level of impairment in each of eight domains
- Completed on a quarterly basis
- Higher scores indicate more impairment
- Therefore improvement is reflected in lowering CAFAS scores over time.

Analysis - Hierarchical Linear Modeling (e.g. Mueller et al, in press)

- Identify daily average rate of improvement on total CAFAS scores over the course of an IIH treatment episode for youth with a DBD
- Test whether the differential application of EBS-PEs for youth with a DBD affects daily average rate of improvement
- Examine potential confounding factors
- Explore specific practice elements and rate of improvement

Results-Overall Pattern

- Youth with DBDs enter IIH treatment at significant levels of impairment and show improvement in functioning over time

Initial Status and Overall Rate of Improvement Among Youth with Any DBD in IIH Care

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Mean</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Status</td>
<td>102.182</td>
<td>2.170</td>
</tr>
<tr>
<td>Rate of Change</td>
<td>-0.115***</td>
<td>0.014</td>
</tr>
</tbody>
</table>

Note. ~p < .10; *p < .05; **p < .01; ***p < .001

Neither youth age, gender nor presence of comorbidity predicted rate of improvement while in IIH

Results-EBS

- Incremental increase in use of practices derived from the EBS literature (EBS-PEs) for DBD increases the rate of improvement

Rate of Improvement Related to Use of EBS PEs

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Mean</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Status</td>
<td>102.252***</td>
<td>2.174</td>
</tr>
<tr>
<td>Rate of Change</td>
<td>0.076**</td>
<td>0.023</td>
</tr>
<tr>
<td>EBS PEs</td>
<td>-0.005*</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Note. ~p < .10; *p < .05; **p < .01; ***p < .001

Results-Examining Alternative Explanations (I)

- When entered together, the use of EBS-PEs but not "Other PEs" predicted greater rate of improvement.

Rate of Improvement for EBS PEs and Other PEs When Examined Together

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Mean</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Status</td>
<td>102.272***</td>
<td>2.173</td>
</tr>
<tr>
<td>Rate of Change</td>
<td>-0.071**</td>
<td>0.023</td>
</tr>
<tr>
<td>EBS PEs</td>
<td>-0.01*</td>
<td>0.004</td>
</tr>
<tr>
<td>Other PEs</td>
<td>0.018</td>
<td>0.012</td>
</tr>
</tbody>
</table>

Note. ~p < .10; *p < .05; **p < .01; ***p < .001

Results-Examining Alternative Explanations (II)

- Overall dosage does not account for the relationship between amount of EBS practices and rate of improvement

Rate of Improvement for EBS PEs and Dosage When Examined Together

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Mean</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Status</td>
<td>102.096***</td>
<td>2.196</td>
</tr>
<tr>
<td>Rate of Change</td>
<td>-0.053~</td>
<td>0.028</td>
</tr>
<tr>
<td>EBS PEs</td>
<td>-0.004*</td>
<td>0.002</td>
</tr>
<tr>
<td>Dosage</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note. ~p < .10; *p < .05; **p < .01; ***p < .001
Results-Exploration of Specific Practices and Rates of Improvement

- Examined individual PEs that were used at least once in >=10% of cases
  - 74% of the 39 PEs that we used enough to be studied were evidence-based for DBD
  - Only 47% of the 17 seldom used PEs were evidence-based for DBD
- No statistical analyses given exploratory approach

Discussion

- Application of practices distilled from EBS literature relates to increased rate of youth functional improvement (statistical significance)
  - Increase of one additional EBS PE increases rate of improvement about 6-7% (clinical significance)
  - EBS effect is not due to overall dosage or overall number of practices applied

Some Limitations and Future Research

- “EBSness” for all of youths’ diagnoses
- More is better?
- Weighting of EBS practices
- Other diagnoses, other settings, other measures of outcome

EBS in SOC

DMM offers potential as another way to link EBS with SOC

References

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