Characteristics of Brief, Effective Interventions in Children’s Mental Health: A Meta-Analysis

Alain Carlson
Dr. David Armstrong

The Psychotherapy Debate

Hans Eysenck (1952)
- argued that psychotherapy had no beneficial effects

Smith & Glass (1977)
- conducted “meta-analysis” to assess Eysenck’s claim
- averaged treatment-control differences from 375 psychotherapy studies

Smith & Glass (1977)
- Average client receiving psychotherapy was better off than 75% of untreated controls

Response to Smith & Glass (1977)

Eysenck
- “an exercise in mega-silliness” (1978)
- “effect sizes summed over heterogeneous data can hardly be accorded any validity” (1994)

Behavioural, Social, and Health Sciences
- widely accepted as an effective means of summarizing quantitative results from empirical studies

Inspiration for Present Meta-Analysis

Ontario Budget (2011)
- $257 million to improve children’s services
- emphasis on brief services

Why Brief Services?
- few continue past 5-10 sessions
- most evidence-based therapies require more than 10 sessions
- many do not receive adequate dose of psychotherapy
- reduce waiting lists and costs while improving quality of care

Effectiveness of Brief Therapy

Examples of Previous Meta-Analyses
- Kim (2008)
- Stams et al. (2006)

Limitations
- single treatment orientation
- single disorder or class of disorders
- “brief therapy” range extends far beyond 10 sessions, weeks, or hours
- do not focus exclusively on youth
- do not focus on recent studies
Research Questions

1. How effective are brief, youth interventions in changing psychological symptoms?

2. What are the characteristics of the most and least effective interventions?

The Process of Meta-Analysis

- search databases and other sources for studies that fit eligibility criteria
- enter information from each study according to a coding scheme
- use statistical program to examine relationships between variables

Other intervention characteristics

- Some research suggesting behavioural psychotherapies or ‘evidence-based treatment’ more effective

Effectiveness of typical treatment


The Process of Meta-Analysis

- search databases and other sources for studies that fit eligibility criteria
- enter information from each study according to a coding scheme
- use statistical program to examine relationships between variables
Study Selection

Sources
- PsycINFO
- Cochrane Collaboration
- review articles
- prior meta-analyses
- references in studies
- authors and experts

Study Eligibility Criteria

Nature of Treatment
- psychotherapy

Length of Treatment Delivery
- ≤ 10 sessions, weeks, and hours

Participant Age
- ≤ 19 years

Quantitative Information
- sufficient to calculate an effect size

Publication Types
- English, peer-reviewed articles since 1990

Number of Eligible Studies

Hand Searched
- 852

Rejected
- 832

Accepted
- 20

Coding

- publication year
- age range
- treatment duration
- theoretical orientation
- primary concern
- primary measure
- rater(s)
- effect size (M, SD, N)

Analysis of Data

Scores
- pre-post

Raters
- youth
- parent
- clinician
- teacher

Comparisons
- therapy type
- therapy duration
- symptom domain
- age

Descriptives

Table 1

<table>
<thead>
<tr>
<th>Problem Type</th>
<th>Child</th>
<th>Parent</th>
<th>Clinician</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internalizing</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Externalizing</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>
Rated Change: Youth

Table 2
Overall symptom change reported by youth

<table>
<thead>
<tr>
<th>E</th>
<th>5% CI</th>
<th>d</th>
<th>95% CI</th>
<th>Q</th>
<th>Fail-Safe N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.30</td>
<td>1.14 to 1.46</td>
<td>1.07</td>
<td>0.52 to 1.62</td>
<td>9912.46</td>
<td>33</td>
</tr>
</tbody>
</table>

Rated Change: Parent

Table 3
Overall symptom change reported by parent

<table>
<thead>
<tr>
<th>E</th>
<th>5% CI</th>
<th>d</th>
<th>95% CI</th>
<th>Q</th>
<th>Fail-Safe N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.90</td>
<td>0.76 to 1.04</td>
<td>1.00</td>
<td>0.68 to 1.32</td>
<td>7563.05</td>
<td>28</td>
</tr>
</tbody>
</table>

Rated Change: Clinician

Table 4
Overall symptom change reported by clinician

<table>
<thead>
<tr>
<th>E</th>
<th>5% CI</th>
<th>d</th>
<th>95% CI</th>
<th>Q</th>
<th>Fail-Safe N</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.41</td>
<td>0.39 to 0.53</td>
<td>2.20</td>
<td>-0.15 to 4.71</td>
<td>3463.88</td>
<td>7</td>
</tr>
</tbody>
</table>

Meta-analysis of brief treatment
Carlson & Armstrong, unpublished

![Graph showing meta-analysis results for youth, parent, and clinician ratings.]

<table>
<thead>
<tr>
<th>Youth</th>
<th>Parent</th>
<th>Clinician</th>
</tr>
</thead>
<tbody>
<tr>
<td>k = 6</td>
<td>k = 8</td>
<td>k = 7</td>
</tr>
<tr>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Table 5:
Characteristics of effective, brief interventions: Youth ratings

<table>
<thead>
<tr>
<th>E</th>
<th>5% CI</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief Services</td>
<td>d=1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>Post</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Pre</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Therapy Type</th>
<th>E</th>
<th>5% CI</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioural</td>
<td>1.14</td>
<td>0.11</td>
<td>0.92</td>
<td>1.36</td>
</tr>
<tr>
<td>Non-behavioural</td>
<td>1.49</td>
<td>0.12</td>
<td>1.35</td>
<td>1.73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Therapy Duration</th>
<th>6 6</th>
<th>6 10</th>
<th>6 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 to 10 sessions</td>
<td>0.64</td>
<td>0.44</td>
<td>0.87</td>
</tr>
<tr>
<td>weeks, per week</td>
<td>8.68</td>
<td>0.10</td>
<td>8.68</td>
</tr>
<tr>
<td>and hours</td>
<td>1.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symptom Domain</th>
<th>6 6</th>
<th>6 10</th>
<th>6 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derailing</td>
<td>0.10</td>
<td>0.03</td>
<td>0.13</td>
</tr>
<tr>
<td>Internalising</td>
<td>3.49</td>
<td>1.49</td>
<td>3.49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>6 6</th>
<th>6 10</th>
<th>6 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.56</td>
<td>0.12</td>
<td>1.34</td>
<td></td>
</tr>
<tr>
<td>Maximum age 12 and under</td>
<td>1.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum age 14 and over</td>
<td>0.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.26</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Interpretation of Findings

- How effective are brief, youth interventions in changing psychological symptoms?
  - Brief services associated with large, immediate effects when rated by youth or parent
  - These services are consistent with the effects of longer term interventions, but the methodological quality of the present studies does not permit strong conclusions
  - It is not clear whether short-term interventions have long-term benefits

Building evidence-informed practice

- Because of relatively little research, outcomes should be routinely monitored
- Regular follow-up necessary due to complete lack of knowledge of long-term effects
- Programs for young children may be of particular benefit and enable wider access to early intervention
- Internalizing problems respond better to typical short-term interventions

Interpretation of Findings

- What are the characteristics of the most and least effective interventions?
  - For primary raters, there was a non-significant trend towards behavioural intervention being associated with decreased symptoms
  - Youth perceived more change with longer treatment, parents with shorter treatment
  - Externalizing problems associated with less change than internalizing problems
  - Studies with younger individuals associated with more change

Limitations

- Lack of Eligible Studies
  - More research needed
- Evidence-Based Emphasis
  - Only 1 of the 20 studies did not use a manual
References


Contact

Dr. David Armstrong
Chief Psychologist
Upper Canada District School Board
david.armstrong@ucdsb.on.ca