Outcomes for Youth Receiving Intensive In-Home Therapy or Residential Care: A Comparison Using Propensity Scores

Sarah Hurley and Timothy Goldsmith


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New Wine in an Old Bottle?

Wolins and Piliavin (1964). Foster care or group care: A century of debate...

Group care has been on its way out due to the following:

- Too expensive
- Not obviously effective
- Not “least restrictive”

Intensive in-home therapy is new varietal to be tested against group care

Previous Research: Deficiencies in Residential Care

- Critical reviews of efficacy (Bums & Hoagwood, 2002; Lyons & McCullough, 2006)
- Inability to meet standards of evidence-based practice (Hair, 2005)
- Short-term gains mitigated following discharge (Leichtman, 2006)

Continued High Rates of Residential Care Use

- Used by some states for more than 50% of older adolescents (Wulczyn, 2001; Barth & Chintapalli, in press)
- Illinois spent 75% of their mental health services budget on residential care and psychiatric hospitalization for 50,000 children (Lyons & McCullough, 2006)
- California spent 60% of its out-of-home care budget on children in residential care (Webster, 1999)

Defining Residential Care

- 24-hour facilities
  - Shift care
    - Typically offering mental health treatment
    - Typically directed by psychologists and social workers
  - Vary in size, populations served, and services
  - Heterogeneous approaches to care: Social learning, Psychoeducational, Milieu therapy
  - Group processes emphasized over individualization

Defining Intensive In-Home Treatment

- Derived from Multisystemic Therapy
  - Small caseloads
  - Approximately 6 months
  - Skill training
  - Work with other systems
  - Fidelity measures in place
Previous Research: Comparisons

- Equivalent outcomes, if not better under certain alternative conditions (Henggeler et al., 2003)
- Treatment foster care superior to small group home care (Chamberlain & Reid, 1998; Leve & Chamberlain, 2005)
- Decrease in youth’s problem behavior has been associated with disaggregation of troubled youth (Dishion & Dodge, 2005)
- Alternatives shown to be less costly (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001)

Variables Related to RC Outcomes

Age, diagnosis, race, antisocial behavior, prior substance abuse histories, and incarcerated parents (Lyons & McCullough, 2006; Baker, Wulczyn & Dale, 2005; Gorske, Srebalus & Walls, 2003)

But...other studies have found that such characteristics do not predict discharge status (Stage, 1999; Peterson & Scanlan, 2002)

Purpose of Present Investigation

1. To demonstrate whether intensive in-home therapy (IIHT) derived from MST is more effective than traditional residential care (RC) for behaviorally difficult youth
2. To understand and control for differences in case characteristics between IIHT and RC youth

Method: Design

- Pre/Post at 1-year after discharge
- Post-hoc quasi-experimental design using propensity score matching

Method: Sample

1,369 youth receiving IIHT (n=937) or RC (n=432) from a large provider of behavioral health services in the Southeast

- 22% African American
- 67% Male
- 47% 12-15 years-old
- Youth only received either IIHT or RC with this agency
- Multiple sites

Method: Measures

Outcome variables at One Year Post-Discharge
- Not attending school
- Trouble with the law
- Not living with family
- Subsequent out-of-home of placement

Combined to create a 3-level ordinal composite outcome variable
- Desirable, Mixed and Undesirable
Method: Analytic Approach

1. Identify selection bias among sample
   - Bivariate analyses
2. Conduct propensity score matching (PSM)
   - Logistic regression
   - Create matched sample using nearest-neighbor matching
   - Sensitivity analyses
   - Bivariate analysis
3. Perform outcome analysis with matched samples
   - Ordinal logistic regression

Natural Selection Bias

Before Matching, differences among IIHT and RC youth:

<table>
<thead>
<tr>
<th></th>
<th>IIHT Youth</th>
<th>RC Youth</th>
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<tbody>
<tr>
<td>African-American</td>
<td>36.6%</td>
<td>21.9%</td>
</tr>
<tr>
<td>Male</td>
<td>61.3%</td>
<td>55.7%</td>
</tr>
<tr>
<td>12 - 15 years old</td>
<td>61.5%</td>
<td>47.2%</td>
</tr>
<tr>
<td>Presenting problem of delinquency</td>
<td>75.5%</td>
<td>62.5%</td>
</tr>
<tr>
<td>Number of delinquency types</td>
<td>40.7%</td>
<td>33.4%</td>
</tr>
<tr>
<td>Youth from Mississippi</td>
<td>9.9%</td>
<td>13.8%</td>
</tr>
<tr>
<td>Presenting problem of mental health issues</td>
<td>60.5%</td>
<td>46.9%</td>
</tr>
<tr>
<td>Number of mental health problems</td>
<td>22.2%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Incurribile/Unruly</td>
<td>17.8%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Other criminal behavior</td>
<td>18.5%</td>
<td>10.7%</td>
</tr>
<tr>
<td>Commission of a sex offense</td>
<td>15.3%</td>
<td>10.8%</td>
</tr>
<tr>
<td>Siblings in out-of-home care</td>
<td>4.4%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Past mental health treatment</td>
<td>70.4%</td>
<td>45.9%</td>
</tr>
<tr>
<td>Past inpatient treatment</td>
<td>42.9%</td>
<td>26.4%</td>
</tr>
<tr>
<td>Past outpatient treatment</td>
<td>46.1%</td>
<td>30.0%</td>
</tr>
<tr>
<td>Received special education services</td>
<td>20.5%</td>
<td>15.7%</td>
</tr>
<tr>
<td>Parents received public financial assistance</td>
<td>40.3%</td>
<td>30.2%</td>
</tr>
</tbody>
</table>

*p < .05
**p < .01
***p < .001

Propensity Score Matching with Sensitivity Analysis: Procedure

Logistic regression using 2 models to estimate propensity for receiving IIHT

1. Scheme 1 - race, gender, age group, number of mental health problems, committed a status offense, committed a sex offense,siblings in out-of-home care, and past treatment
2. Scheme 2 - race, gender, age group, presenting problem of delinquency, number of mental health problems, committed a status offense, other criminal behavior, committed a sex offense, and receipt of special education services

Results: PSM

Matched n=393 PAIRS

5 of 17 bivariate differences remained significant:
- Race (p<.01)
- Age group (p<.01)
- Presenting problem of mental health problems (p<.05)
- Number of mental health problems (p<.05)
- Committed a status offense (p<.01)

Results: Post Matching Logistic Regression Model

Proportions with desirable outcome

<table>
<thead>
<tr>
<th></th>
<th>IIHT:</th>
<th>RC:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion</td>
<td>.615</td>
<td>.558</td>
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</table>

Proportion with undesirable outcome

<table>
<thead>
<tr>
<th></th>
<th>IIHT:</th>
<th>RC:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion</td>
<td>.202</td>
<td>.243</td>
</tr>
</tbody>
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Interpretation: Slightly positive impact of IIHT as compared to RC with a statistical trend
Results: Post-Matching Analysis

- Siblings in out-of-home care: OR (95%, CI) = 0.356 (.167, .756)*
- Post mental health treatment: OR = 0.662 (.470, .931)*

Not significant: Treatment, Race, Gender, Age group, Number of mental health problems, Committed a status offense, or Committed a sex offense

*p<.05

Implications for Practice

- Intensive in-home approaches can reduce need for residential care
- Intensive in-home approaches should be tried before youth enter residential care
- First out-of-home placements are often more restrictive, bypassing alternative, less restrictive approaches (James, Leslie, Hurbut, Slymen, Landver, Davis, et al., 2006)
- Potential for cost savings

Implications for Research

- More studies are needed using...
  - Randomized service trials
  - Quasi-experimental designs with methods to reduce selection effects (i.e., PSM)
  - Large samples
  - Longitudinal approaches to tease out cause/effect relationships
  - Standardized measures
  - Cost-benefit analyses

Limitations

- Not randomized
- PSM did not eliminate all measured pre-existing differences
- Final sample may represent youth in group care with less serious problems, thus not indicate the effectiveness of group care for all youth

References


References (cont.)

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Contacts for further information:

Richard Barth
rbarth@ssw.umaryland.edu
410-706-7794

Sarah Hurley
Sarah.hurley@youthvillages.org
901-251-4950

Tim Goldsmith
Tim.goldsmith@youthvillages.org
901-251-5000