Youth, Caregiver, and Family-level Predictors of Attrition in a Longitudinal Study of Youth and their Caregivers

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Background

• 20% of young people in the U.S. experience a mental, emotional, or behavioral health challenge

• $247 billion in annual costs

• Caregivers and families are a key source of support

• Caregivers and families at risk for poor outcomes including caregiving strain, job stress, social/emotional problems, poor family functioning, etc.

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1 National Research Council and Institute of Medicine, 2009; 2 Brannan & Heflinger, 2006; 3 Rosenzweig, Brennan, & Ogilvie, 2002; 4 Tahhan, et al., 2010;
Background

- Longitudinal studies critical for identifying predictors of poor (or favorable) outcomes for youth, caregivers, and families
- Findings provide the foundation for effective interventions
- Longitudinal study attrition creates problems:
  - diminished statistical power
  - potentially biased results
  - compromised generalizability
  - inefficient use of study resources

- Very few studies have sought to identify families at risk for study attrition nor the impact of youth, caregiver, and family-level factors on attrition

5 Bambs et al., 2013; 6 Gustavson, von Soest, Karevold, & Roysamb, 2012; 7 Goldstein, 2009

Aim of the present study

To examine youth, caregiver, and family-level predictors of 6-month attrition in a longitudinal outcomes study of youth with behavioral health challenges and their caregivers

Adapted Social-Ecological Model

8 Bronfenbrenner, 1999
Methods - Participants and recruitment

• Youth with mental, emotional, or behavioral health challenges referred to “FAST TRAC” system of care by local service providers – 240 since December 2010

• Youth not considered independent or in custody of CFS may be accompanied by “caregiver” (e.g., biological parent or other relative, adopted parent, non-parent)

• All youth and caregivers (if applicable) invited to enroll in longitudinal outcomes study

• At December 2013 data cut off, 152 baseline interviews with youth/caregiver dyads (approximately 63% of potential)

Procedure

• Youth and caregivers participate in a structured interview at program intake, 6, 12, 18, and 24 months

• In participants home or a community location

• Approximately 2 hours for each interview (i.e., youth and caregiver)

• $20(x2) compensation at completion of each interview
Measures

• Outcome = study status at 6 months (0 = in study, 1 = dropped out) as defined by:
  > Missing caregiver interview at 6 months; and
  > Greater than 8 months in study as of December 2013 data cutoff

• Predictors at baseline:
  > Youth age, sex, and MH diagnoses
  > Caregiver age, sex, and global caregiving strain (CGSQ)\(^9\)
  > Total number of children in household
  > Family configuration (e.g., biological parent, non-parent relative)
  > Services received (e.g., home-based, school-based, case management)

\(^9\) Brannan, Heflinger, & Bickman, 1997

Analysis

• Chi-square and independent t-tests for group differences

• Logistic regression for predictors of study attrition at 6 months
# Results

## Table 1. Characteristics of the study sample (N = 152)

<table>
<thead>
<tr>
<th></th>
<th>In study (n = 102)</th>
<th>Dropped out (n = 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Youth factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age in Years (Mean, SD)</td>
<td>12.2 (3.77)</td>
<td>12.7 (4.32)</td>
</tr>
<tr>
<td>Sex (male)</td>
<td>67.7%</td>
<td>55.3%</td>
</tr>
<tr>
<td>Diagnosis - Mood Disorder (yes)</td>
<td>34.9%</td>
<td>52.2%*</td>
</tr>
<tr>
<td>Diagnosis - Oppositional Defiant Disorder (yes)</td>
<td>16.3%</td>
<td>28.3%</td>
</tr>
<tr>
<td><strong>Caregiver factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age in Years (Mean, SD)</td>
<td>40.9 (10.22)</td>
<td>42.6 (9.98)</td>
</tr>
<tr>
<td>Sex (male)</td>
<td>11.8%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Caregiving strain (Mean, SD)</td>
<td>8.9 (2.52)</td>
<td>9.4 (2.38)</td>
</tr>
<tr>
<td><strong>Family factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of children in household (Mean, SD)</td>
<td>2.7 (1.69)</td>
<td>2.2 (1.20)*</td>
</tr>
<tr>
<td>Biological family (yes)</td>
<td>72.6%</td>
<td>72.9%</td>
</tr>
<tr>
<td>Non-parent relative (yes)</td>
<td>32.6%</td>
<td>14.6%**</td>
</tr>
<tr>
<td>Services received - Home-based (yes)</td>
<td>64.9%</td>
<td>62.5%</td>
</tr>
<tr>
<td>Services received - School-based (yes)</td>
<td>87.2%</td>
<td>77.1%</td>
</tr>
<tr>
<td>Services received - Case management (yes)</td>
<td>49.0%</td>
<td>66.7%*</td>
</tr>
</tbody>
</table>

* * p < .10. ** p < .05. *** p < .01.

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## Results

### Table 2. Results of logistic regression for study attrition at six months (N = 138)

<table>
<thead>
<tr>
<th></th>
<th>OR</th>
<th>95% C.I.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1.00</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Male</td>
<td>2.440</td>
<td>1.042 - 5.715</td>
<td>.040</td>
</tr>
<tr>
<td>Youth age</td>
<td>1.084</td>
<td>0.967 - 1.215</td>
<td>ns</td>
</tr>
<tr>
<td>Youth diagnosis – Oppositional Defiant</td>
<td>1.000</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>No</td>
<td>0.321</td>
<td>0.120 - 0.857</td>
<td>.023</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caregiver sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1.00</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Male</td>
<td>1.707</td>
<td>0.431 - 6.766</td>
<td>ns</td>
</tr>
<tr>
<td>Caregiver age</td>
<td>0.976</td>
<td>0.933 - 1.022</td>
<td>ns</td>
</tr>
<tr>
<td>Number of children in household</td>
<td>0.772</td>
<td>0.569 - 1.049</td>
<td>.098</td>
</tr>
<tr>
<td>Services received - Case management</td>
<td>1.000</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>No</td>
<td>0.390</td>
<td>0.170 - 0.893</td>
<td>.026</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Omnibus $X^2$ (p-value) 14.631 (p = .041)

Nagelkerke $R^2$ .153

*Simpson’s Paradox* (Agresti & Finlay, 1999) in which the direction of an apparent bivariate association can be reversed when other variables are controlled for.
Discussion

- Attrition rate in comparison to similar studies.
- Findings useful at two levels:
  1. Difference between groups as a potential source of bias (i.e., remaining participants are somehow different than drop-outs)
  2. Risk/protective factors for study attrition

Cotter et al. (2005) conclude that "in general, researchers trust that a [20%] [attrition] rate is [acceptable] (p. 16).

Discussion

- 33% attrition rate in comparison to similar studies.

What steps could we implement to improve retention if the acceptable rate is 20%?
Discussion

• Differences between groups, even though marginal in some cases, may be bias findings based on these data:
  
  ➢ lower prevalence of mood disorders in remaining sample
  
  ➢ larger households
  
  ➢ more “non-parent relatives”
  
  ➢ less case management received

Discussion

• Risk/protective factors for study attrition (preliminary):
  
  ➢ Families with male youth at more risk
  
  ➢ Families of youth diagnosed with ODD at less risk
  
  ➢ Larger families at less risk
  
  ➢ Families receiving case management services at less risk
Limitations

• Overwhelmingly Caucasian sample (≈ 95%)

• All data by self-report, including services received

• Confounders – model needs to be further dissected before drawing firm conclusions

• Present lack of data on service dis/engagement – may be the biggest contributor to study attrition

Acknowledgments

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Questions or comments may be directed to:

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Thank you!