Evidence for Synergy Between Home Visiting and Maternal Depression Treatment

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The Collaborative Science of Home Visiting Meeting
Washington, D.C. May 6, 2015
Research infrastructure in ECS

- **eECS**
  - 23,000 families
  - 575,000 HVs

- **Staffing & integration**
  - SAC Committee
  - Stakeholder participation

- **CCHMC**
  - Behavioral Medicine,
  - Neonatology, Epidemiology,
  - Community Pediatrics, QI

- **NIMH R34 & R01**
  - Treatment of Maternal Depression in Home Visitation: Mother and Child Impacts
  - (PI: Ammerman)

- **NICHD R01**
  - Engaging Fathers in Home Visitation: Incorporation of a Co-Parenting Intervention
  - (PI: Ammerman)

- **NICHD R01**
  - Cincinnati Home Injury Prevention Project
  - (PI: Phelan)

- **K12 BIRCHW Award**
  - (PI: Goyal)
  - Ohio Dept. of Public Safety (PI: Folger)
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Course of Depression (BDI > 13 @ enrollment and/or 9 months) in home visitation (N = 806)

- 55.8% with depression
- 44.2% without depression
- 74.8% with trauma history
- 12% receive mental health treatment

Home visiting alone has no impact on depression.
Maternal depression & child maltreatment

From Easterbrooks et al., 2013
Unique Opportunities

• Reach mothers who might not otherwise receive treatment.
• Appeal to mothers’ interest in their baby’s development.
• Lower barriers to treatment.
• Identify mothers early in the MDD episode.
• Leverage relationship between mother and home visitor.
• Leverage ongoing and lengthy home visiting services to optimize outcomes.
Adaptations and scaffolding: Avoiding the real world “cliff”

Expected outcome from transfer of laboratory-based treatments to real world settings
- Stigma and obtaining treatment
- Poor understanding of depression
- Negative history with treatment
- Transportation barriers
- Misidentification and diagnosis
- Diffuse treatment focus
- Inadequate training in perinatal depression
- Inadequate appreciation for mom’s issues
- Insufficient collaboration and coordination

Observed outcome from transfer of laboratory-based treatments to real world settings
In-Home Cognitive Behavioral Therapy

- 15 sessions + 1 booster
- Lowering depressive symptoms
- Home
- Young, high-risk mothers
- Leverages home visiting
- Collaborative
- Tailored
- Setting
- Target
- Cognitive Behavioral Therapy

◊ accurate diagnosis ◊ addressing stigma
◊ lower barriers ◊ perinatal dep knowledge
◊ dep focus ◊ collaboration ◊ relevant to mom’s challenges

From Ammerman et al., 2014
What demographic, clinical, and program characteristics best predict ideal an depression outcome?

WHY?
- Mothers in home visiting have many of the characteristics associated with poorer outcomes. What differentiates them?
- Who is most likely to benefit from treatment?
- Can we improve treatment?

Beck Depression Inventory-II at Post-treatment:
- Asymptomatic: ≤8
- Symptomatic: ≥9
MDD diagnosis at pre- & post-treatment & follow-up (n = 93)

χ²=19.0, p<.001
**Sample Demographics (N=60)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>M (SD) or N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mother age (years)</strong></td>
<td>22.4 (5.0)</td>
</tr>
<tr>
<td><strong>Mother Race</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>37 (61.6%)</td>
</tr>
<tr>
<td>African American</td>
<td>20 (33.3%)</td>
</tr>
<tr>
<td>Native American</td>
<td>1 (1.7%)</td>
</tr>
<tr>
<td>Native Hawaiian or other Pacific Islander</td>
<td>1 (1.7%)</td>
</tr>
<tr>
<td>Bi-racial</td>
<td>1 (1.7%)</td>
</tr>
<tr>
<td><strong>Mother Ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>Latina</td>
<td>4 (6.7%)</td>
</tr>
<tr>
<td>None</td>
<td>56 (93.3%)</td>
</tr>
<tr>
<td>Variable</td>
<td>M (SD) or N (%)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
</tr>
<tr>
<td>Single, Never Married</td>
<td>52 (86.7%)</td>
</tr>
<tr>
<td>Married</td>
<td>8 (13.3%)</td>
</tr>
<tr>
<td>Education (years)</td>
<td>11.5 (1.9%)</td>
</tr>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>$0-9,999</td>
<td>33 (55.0%)</td>
</tr>
<tr>
<td>$10,000-19,999</td>
<td>12 (20.0%)</td>
</tr>
<tr>
<td>$20,000-29,999</td>
<td>11 (18.3%)</td>
</tr>
<tr>
<td>$30,000-39,999</td>
<td>3 (5.0%)</td>
</tr>
<tr>
<td>$40,000-49,999</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>&gt;$50,000</td>
<td>1 (1.7%)</td>
</tr>
<tr>
<td>Child’s age (days)</td>
<td>152.0 (73.0)</td>
</tr>
<tr>
<td>Child Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>28 (46.7%)</td>
</tr>
<tr>
<td>Female</td>
<td>32 (53.3%)</td>
</tr>
</tbody>
</table>
Asymptomatic & symptomatic outcomes

N=60

- Asymptomatic
- Symptomatic
Variables considered in model

- Mother age and education
- Childhood trauma
- # MDD episodes, age of 1\textsuperscript{st} episode, 
  # comorbidities
- Pre-treatment BDI-II
- Personality DO symptoms
- # IH-CBT visits and # home visits
**MANOVAs on variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Asymptomatic</th>
<th>Symptomatic</th>
<th>Wald Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother age</td>
<td>22.30 (4.72)</td>
<td>23.50 (4.85)</td>
<td>-1.67*</td>
</tr>
<tr>
<td>Mother education</td>
<td>11.61 (3.41)</td>
<td>11.56 (3.40)</td>
<td>0.27</td>
</tr>
<tr>
<td>CTQ</td>
<td>59.18 (7.69)</td>
<td>61.56 (7.65)</td>
<td>-0.66</td>
</tr>
<tr>
<td>Age 1\textsuperscript{st} episode</td>
<td>15.06 (3.88)</td>
<td>14.80 (3.85)</td>
<td>0.19</td>
</tr>
<tr>
<td># MDD episodes</td>
<td>2.74 (1.65)</td>
<td>3.18 (1.78)</td>
<td>-2.77**</td>
</tr>
<tr>
<td># diagnoses</td>
<td>1.85 (1.36)</td>
<td>2.00 (1.41)</td>
<td>-1.19</td>
</tr>
<tr>
<td>BDI-II pre-txt</td>
<td>33.46 (5.78)</td>
<td>36.39 (6.03)</td>
<td>-2.04*</td>
</tr>
<tr>
<td>IPDS</td>
<td>4.67 (2.16)</td>
<td>5.83 (2.42)</td>
<td>-2.73**</td>
</tr>
<tr>
<td># IH-CBT sessions</td>
<td>13.12 (3.62)</td>
<td>10.94 (3.31)</td>
<td>2.83**</td>
</tr>
<tr>
<td># Home visits</td>
<td>13.94 (3.73)</td>
<td>8.83 (3.97)</td>
<td>9.37**</td>
</tr>
</tbody>
</table>

*Note: ** = p < .01; * = p < .05*
Predictors of BDI-II symptoms at post-treatment
Conclusions

- Most, but not all, mothers achieve post-treatment BDI-II scores indicative of clinically significant response.
- Post-treatment scores are predicted by age, clinical severity and program intensity.
- Home visits, particularly in the first half of IH-CBT treatment, predict more robust depression outcomes consistent with the theoretical importance of close collaboration between IH-CBT treatment and home visiting.
MBD Nationally

- Tennessee (3 sites)
- Kentucky (6 sites)
- Massachusetts (4 sites)
- West Virginia (2 sites)
- Connecticut (4 sites)
- Kansas (1 site)
- Pennsylvania (1 site)
- California (1 site)
- 8,600 mothers in HV

www.movingbeyonddepression.org
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• United Way of Greater Cincinnati
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