Attachment and Biobehavioral Catch-up: An Intervention for Parents of Young Children Who Have Experienced Adversity

Presented at Rudd Adoption Research Program: New Worlds of Adoption Conference 2011

Mary Dozier
Infant-Caregiver Lab
University of Delaware
Infants and Toddlers

- Biologically prepared to depend on caregivers
Failure in this caregiving system

Nothing could be more threatening
Neglect, abuse

Adverse effects on:
  Behavioral development
  Brain development
Attachment and Biobehavioral Catch-up Intervention

- 10-session intervention developed in Infant Caregiver Lab at University of Delaware

- Targets key issues identified as problematic for children who have experienced early trauma

- Interventions for
  - Foster parents of infants (1-2 years old)
  - High-risk birth parents of infants and toddlers
  - Parents adopting internationally
  - Foster parents of toddlers (2-3 years old)
<table>
<thead>
<tr>
<th>Issue</th>
<th>Intervention target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children push caregiver away</td>
<td>Children need nurturance even though they fail to elicit it</td>
</tr>
<tr>
<td>Children dysregulated behaviorally and biologically</td>
<td>Children need responsive care to help them develop regulatory capabilities</td>
</tr>
<tr>
<td>Parents behave in frightening ways</td>
<td>Children need parents who are not frightening</td>
</tr>
</tbody>
</table>
Children push parents away

- Diary study over 60 days
  - What did child do? What did you do in response?

- Contingency analyses reveal that parents respond “in kind”
  - (Stovall-McClough & Dozier, 2004)
First intervention component:
Providing nurturance when child does not elicit it

This child needs you even though she may not appear to need you
First intervention component: Re-interpreting child’s behavioral signals

Your child may not appear to need you

But, every child needs his or her parent

• Need to re-interpret signals
• Need to provide nurturance

Task is tougher for high-risk birth mother than for the rest of us
<table>
<thead>
<tr>
<th>Issue</th>
<th>Intervention target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children push caregiver away</td>
<td>Children need nurturance even though they fail to elicit it</td>
</tr>
<tr>
<td><strong>Children dysregulated biologically and behaviorally</strong></td>
<td>Children need responsive care to help them develop regulatory capabilities</td>
</tr>
<tr>
<td>Parents behave in frightening ways</td>
<td>Children need parents who are not frightening</td>
</tr>
</tbody>
</table>
Early adversity ("toxic stress") leads to biological dysregulation (Levitt)

Non-human and rodent (as well as human) studies have shown effects of early experience on HPA system (e.g., Levine; Blaire; Granger; Gunnar; Dozier; Fisher; Sullivan)
HPA system

H - Hypothalamus
P - Pituitary
A – Adrenal

Cortisol an end product

Sensitive to effects of early experience
HPA axis: Negative feedback

- **Hypothalamus**
  - CRH
  - Corticotropin Releasing Hormone

- **Anterior Pituitary**
  - ACTH
  - Adrenocorticotropic Hormone

- **Adrenal Cortex**
  - CORT

**HPA Axis**

**Negative Feedback**
**HPA system: 2 orthogonal functions**

- **Stress reactive function**
  - Body’s mounting a stress response

- **Diurnal function**
  - Organism functioning as diurnal (or nocturnal) creature
    - We (and many others) have found more action with diurnal function
Typical diurnal pattern of cortisol
When we measure cortisol

<table>
<thead>
<tr>
<th>Time</th>
<th>µg/dl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wake-up</td>
<td>0.9</td>
</tr>
<tr>
<td>30-min</td>
<td>0.5</td>
</tr>
<tr>
<td>mid-am</td>
<td>0.2</td>
</tr>
<tr>
<td>mid-aft</td>
<td>0.1</td>
</tr>
<tr>
<td>bedtime</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Assessing cortisol production

- Sequestered in saliva; can be sampled non-invasively
Various issues to consider

- Developmental issues
- Timing since “event”
- Type of adversity
Various ways to go wrong

- High, low, blunted
Log-transformed Cortisol (µg/dl)

Sample

Wake-up

Bedtime

Low-risk
Neglected, foster
Neglected, birth

Bernard & Dozier, 2010
Dysregulation

- Biological dysregulation: cortisol
- Behavioral dysregulation:
  - Behavior problems
  - Inhibitory control
Say “day”
Say “night”
Performance on day-night Stroop task for maltreated children with different numbers of placements

Lewis & Dozier, 2007
Second target for intervention: Helping children develop better regulatory capacities

- Parents need to provide environments that will help children to develop more normative regulatory capacities
Helping children develop better regulatory capacities

- Follow lead with delight
<table>
<thead>
<tr>
<th>Issue</th>
<th>Intervention target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children push caregiver away</td>
<td>Children need nurturance even though they fail to elicit it</td>
</tr>
<tr>
<td>Children dysregulated behaviorally and biologically</td>
<td>Children need responsive care to help them develop regulatory capabilities</td>
</tr>
<tr>
<td>Parents behave in frightening ways</td>
<td>Children need parents who are not frightening</td>
</tr>
</tbody>
</table>
Frightening behavior

Many parents behave in frightening ways

• way to control behavior
• response to distress (modeling)
• unaware (even dissociating)
Frightening behavior

- Infants have no choice
  - e.g., Sullivan et al., rodent infants show odor preference when odor paired with shock or tail pinch
  - Frightened of parent, but must rely upon him/her
Disorganized attachment

Breakdown in attachment
Children experience “unsolvable dilemma”
(can’t go to parent, can’t move away)

Can be seen in a number of ways, including:
  - Apprehension of parent (hand to mouth)
  - Stilling or freezing
  - Contradictory attachment strategies
  - Stereotypies
Disorganized attachment

Associated with later externalizing behavior acting out, etc.

(Fearon et al., 2010)
Reduce frightening behavior

- Make clear how parental behaviors can be overwhelming to child (e.g., tickling, teasing)
- Help parents notice those behaviors
- Help parents see other choices
- (will be mentioned later: help parents see how their own experiences of being frightened may play into this)
<table>
<thead>
<tr>
<th>Problem</th>
<th>Target</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children push caregiver away</td>
<td>Provide nurturance even though children fail to elicit it</td>
<td>Secure, organized attachment</td>
</tr>
<tr>
<td>Children dysregulated behaviorally and biologically</td>
<td>Provide responsive care</td>
<td>Enhanced regulatory capabilities</td>
</tr>
<tr>
<td>Parents behave in frightening ways</td>
<td>Don’t behave in frightening ways</td>
<td></td>
</tr>
</tbody>
</table>
Attachment and Biobehavioral Catch-up

1-2 Providing nurturance
3-4 Following the child’s lead
5 Attending to signals
6 Reducing frightening behavior
7-8 Recognizing own issues
9 Touching
10 Encouraging emotions
Attachment and Biobehavioral Catch-up

Help parent to change how she parents through:
   Helping her to see what she’s doing:
      “in the moment”
      through videotape

Help parent think through how her own issues affect her parenting (“voices from the past”)

Examples of in the moment feedback:
When mom is taking the lead, etc.

1. Point out *specifically* what the mom just did:

   “That’s a perfect example of responding in a sensitive way—she fell down and you picked her up and asked ‘Are you okay?’ Good job!”

2. Linking how what mom just did affects child:

   “Great job responding to her when she started crying! Did you see how she looked at you when she got upset? The way you patted her back let her know that you are there for her when she needs you!”
Examples of in the moment feedback: When mom struggles to respond sensitively:

1. Taking the blame (use this especially early on because it’s least threatening):
   “I’m so sorry—I’m taking all of your attention and getting in the way of you responding to what he needs right now... You can go ahead and pick him up.”

2. Coaching/ scaffolding the mom’s behavior:
   “This is a time when you can just do what she does—Let’s try that and see what happens.”

3. Asking mom to notice when she doesn’t respond:
   “What just happened there? ....”
State of mind, history of trauma

- Attachment state of mind
  - Affects parenting sensitivity
  - Affects parenting frightening behavior

- History of trauma
  - Affects frightening/frightened behavior
  - Abusive behavior
    - e.g., Van Ijzendoorn meta-analyses; Schuengel et al.
State of mind, history of trauma

- How to change?
Over-riding parents’ own tendencies

- Voices from the past
- Considering one’s own issues that affect parenting
- Over-riding natural propensities (making automatic non-automatic)
- Providing nurturance even though it may not come naturally
Over-riding parents’ own tendencies

Parents need to provide nurturing, responsive care even if it does not come naturally for them. We attempt to get parents to “over-ride” their usual approach, responding in less automatic fashion.
Intervention targets these 3 issues

1. Nurturance: Pick up crying baby even if he/she does not elicit it
2. Follow lead with delight
3. Don’t frighten child
Assessing outcomes

Randomly assigned children and parents to ABC or to an alternate intervention (DEF)

125 children, half in ABC, half in DEF

Attachment assessed in Strange Situation (Ainsworth et al., 1978)
Breakdown significantly different for ABC and DEF

- For 4 groups
- For disorganized vs. organized attachment
- For secure vs. insecure attachment
Percentage disorganized attachment among children in ABC and DEF interventions

\[ \chi^2 (1,120) = 7.60, \ p < .01 \]

Bernard, Dozier et al., 2010
Assessment of cortisol

- Assessed at wake-up and bedtime post-intervention
- 3 days
- Diary of sleep, meds, etc.
Wake-up and bedtime cortisol for neglected children in ABC and DEF groups
Overview of effectiveness

Attachment and Biobehavioral Catch-up

- More optimal physiological and behavioral development
  - More secure, less disorganized attachment
  - More normative cortisol production
Acknowledgments

- NIMH R01 52135, 84135, 74374
- Philadelphia DHS
- Delaware DFS
- Edna Bennett Pierce

- Infant-Caregiver Lab
  - Chase Stovall
  - Johanna Bick
  - Allison Wallin
  - Shelly Ball
  - Oliver Lindhiem
  - Christine Tyrrell
  - Brady Bates
  - John Ackerman
  - Kristin Bernard
  - Oliver Lindhiem
  - Clorinda Velez
  - Katie Albus
  - Sandra Sepulveda-Kozakowski
  - Elizabeth Peloso
  - Melissa Manni
  - Annie Bernier

- Other scientists
  - Seymour Levine, Megan Gunnar, Nathan Fox, Charley Zeanah, Phil Fisher, Mar Sanchez, Seth Pollak, Elena Grigorenko
Thanks!

- mdozier@udel.edu
- http://icp.psych.udel.edu/