Attachment and Biobehavioral Catch-up

Presentation for ACF
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Children who have experienced adversity at risk for problems related to:

- Attachment organization
- Neuroendocrine functioning
- Regulation of emotions
- Regulation of behavior
Children who have experienced adversity at risk for problems related to:

- Attachment organization
  - High rates of disorganized attachment
- Neuroendocrine functioning
- Regulation of emotions
- Regulation of behavior
Intervention Target 1:
Parent nurturance/Child attachment

- Parents helped to provide nurturing care when children distressed
  - Even when child fails to elicit
  - Even when it doesn’t come naturally to parent
Children who have experienced adversity at risk for problems related to:

- Attachment organization
- Neuroendocrine functioning
  - Atypical daytime patterns of cortisol production
- Regulation of emotions
- Regulation of behavior
Diurnal pattern of cortisol production
Wake-up Bedtime

Log-transformed Cortisol (ug/dl)

-0.4
-0.6
-0.8
-1
-1.2

Sample
Bernard, Butzin-Dozier, Rittenhouse, & Dozier, 2010

Low-risk
Neglected, foster
Neglected, birth
Children who have experienced adversity at risk for problems related to:

- Attachment organization
- Neuroendocrine functioning
- Regulation of emotions
  - Short-term: Anger, affect regulation
  - Long-term: Depression, anxiety
- Regulation of behavior
Children who have experienced adversity at risk for problems related to:

- Attachment organization
- Neuroendocrine functioning
- Regulation of emotions
- Regulation of behavior
  - Increased rate of problem behaviors
Parents helped to behave in synchronous ways

- Shonkoff refers to this as “serve and return”
- More synchronous parent-child interactions associated with better child self-regulation (Raver, 1996)
<table>
<thead>
<tr>
<th>Problem</th>
<th>Target</th>
<th>Outcome</th>
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<tbody>
<tr>
<td>Child at risk for disorganized attachment</td>
<td>Behave in nurturing ways when child distressed</td>
<td>Secure, organized attachment</td>
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<tr>
<td>Child at risk for difficulties regulating behavior, emotions, physiology</td>
<td>Behave in synchronous ways when child not distressed</td>
<td>Enhanced regulation of behavior, emotions, physiology</td>
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</table>
Attachment and Biobehavioral Catch-up

- 10 sessions provided in home with parents and children present
- Manualized
- Video-feedback
- In The Moment comments regarding intervention targets
Randomly assigned children and parents to ABC or to an alternate intervention (DEF)

120 children, half in ABC, half in DEF (for whom we have outcomes coded)

Attachment assessed in Strange Situation (Ainsworth et al., 1978)
Percentage disorganized attachment among children in ABC and DEF interventions

χ² (1,120) = 7.60, p < .01

Bernard, Dozier, et al., *Child Development*, in press
Daytime Production of Cortisol

- Assessed at wake-up and bedtime post-intervention
Wake-up and Bedtime Cortisol for Children in ABC and DEF groups

![Graph showing log-transformed cortisol levels for ABC and DEF groups. The x-axis represents AM and PM samples, and the y-axis represents log-transformed cortisol levels (in ug/dl). The graph shows a trend of decreasing cortisol levels from AM to PM for both groups, with ABC group showing slightly lower levels than DEF group.]
Regulation of Emotions

- Observed in Tool Task: frustrating task when children were 24 and 36 months old

- Children in ABC Intervention showed lower levels of anger than children in control intervention group
  - Seen in anger, anger towards mother, frustration
    - p values < .05 for composite and sub-scales
Regulation of Behavior

- Parents reported on child behavior problems on each of 3 days using Parent Daily Report (Fisher et al.)

- Parents in ABC Intervention reported lower levels of problem behaviors than parents in control intervention group
Overview of effectiveness

Enhanced attachment outcomes
More secure/fewer disorganized

Enhanced regulation of physiology, emotions, behaviors
ACF sites (NYU, Maryland, Delaware)
Hawaii
Duke
Baltimore
Additional sites with fewer people (Germany, UK, Minnesota, etc.)
Lessons Learned

- Importance of careful screening of parent coaches
- Importance of quantifying fidelity
What are challenges in moving into ACF Early Childhood Programs?

- Do staff have requisite skills needed to learn how to implement intervention with fidelity?

- Can staff be supported to gain skills?
  - Time carved out, buy-in at all levels