Intervening with Young Children in the Child Welfare System: Multidimensional Treatment Foster Care for Preschoolers (MTFC-P)

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Maltreated Children in Foster Care

- There are over 400,000 children in foster care in the United States, and over 250,000 children enter foster care each year.

- These children are exposed to a range of early adverse care experiences.

- Foster children are an exceptionally high risk group.
Role of Neurobiology in Preventive Intervention Research

Early Adverse Care → Critical Neurobiological Systems → Psychosocial Outcomes

Preventive Intervention Programs
Key Questions

- Does early adverse care alter the development of important neurobiological systems?
- Are specific dimensions of early adverse care associated with these alterations?
- Are these alterations amenable to preventive intervention programs?
Multidimensional Treatment Foster Care for Preschoolers (MTFC-P)

- The goal is to decrease foster children’s difficulties by promoting a consistent, responsive, and contingent environment.

- MTFC-P includes:
  - intensive training, support, and supervision for the foster caregivers and
  - targeted services addressing each child’s developmental, behavioral, and emotional needs.
MTFC-P Study

Random Assignment

117 preschool-aged foster children (FC)

60 MTFC-P foster children (MTFC-P)

57 regular foster children (RFC)

60 nonmaltreated, preschool-aged children (CC)

MTFC-P Intervention

Assessment of Outcomes (at 3-mo intervals for 2 yrs, at 6-mo intervals in middle childhood)
In humans, the HPA system produces the steroid hormone cortisol.

This system serves two functions:
- maintaining daily hormone production and
- mounting responses to stressors.

The HPA system has been implicated in anxiety and affective disorders.
Salivary Cortisol Levels
Morning Cortisol Levels

% of children

Cortisol level classification

Low  Average  High

(Bruce, Fisher, Pears, & Levine, 2009)
Foster Children’s Morning Cortisol Levels

(Bruce, Fisher, Pears, & Levine, 2009)
Morning Cortisol Levels Over Time

(Fisher, Stoolmiller, Gunnar, & Burraston, 2007)
Caregiver Stress Levels Over Time

(Fisher & Stoolmiller, 2008)
Morning Cortisol Levels and Caregiver Stress Levels over Time

(Fisher & Stoolmiller, 2008)
Executive Functions

- Executive functions such as inhibitory control and response monitoring involve the prefrontal cortex and anterior cingulate cortex.

- Deficits in executive functioning have been implicated in conduct disorder and attention deficit/hyperactivity disorder.
Modified Stroop Task

Sun Card
Say “night.”

Moon Card
Say “day.”
Inhibitory Control Abilities

(Pears, Fisher, Bruce, Kim, & Yoerger, 2010)
Foster Children's Inhibitory Control Abilities

(Pears, Fisher, Bruce, Kim, & Yoerger, 2010)
Electroencephalogram (EEG)
Feedback-Related Negativity

(Bruce, McDermott, Fisher, & Fox, 2009)
Feedback-Related Negativity

MTFC-P

FCC
Conclusions

- Early adverse care seem to negatively affect critical neurobiological systems.
- Specific dimensions of early adverse care may have differential effects on these systems.
- However, there is evidence to suggest that appropriate interventions may be able to reverse these effects.
<table>
<thead>
<tr>
<th>Type of Cost</th>
<th>RFC</th>
<th>MTFC-P</th>
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<tbody>
<tr>
<td>1. MTFC-P Intervention</td>
<td>NA</td>
<td>$6,168</td>
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<tr>
<td>2. Total RFC Services Cost</td>
<td>$21,253</td>
<td>$16,003 **</td>
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<tr>
<td>Cost of Negative Transitions</td>
<td>$406</td>
<td>$317</td>
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<tr>
<td>Room and Board</td>
<td>$10,204</td>
<td>$10,159</td>
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<tr>
<td>All Other Services</td>
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<td>$5,527 **</td>
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<td>3. Nonprotocol Service Cost</td>
<td>$8,749</td>
<td>$5,058 **</td>
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<td>4. Total Foster Care Costs (sum of items 1 and 2)</td>
<td>$21,253</td>
<td>$22,171</td>
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<td>5. Total Public Agency Cost (sum of items 3 and 4)</td>
<td>$30,090</td>
<td>$27,204 **</td>
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## Collaborators

### MTFC-P Study
- Phil Fisher (PI)
- Jackie Bruce
- Katherine Pears
- Kristen Greenley (Coordinator)

### Center for Drug Abuse Prevention in the Child Welfare System
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### National Institute of Mental Health