PARENTING MATTERS!
Buffering Toxic Stress through Parenting Interventions

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Buffet Early Childhood Institute ~ Parenting Matters Symposium
ROADMAP OF PRESENTATION

• What is toxic stress and what are its effects?

• How can positive parenting buffer children against the effects of toxic stress?

• What evidence exists re: parenting interventions for families experiencing toxic stress?
Shonkoff’s Three Levels of Stress

**Positive**
Brief increases in heart rate, mild elevations in stress hormone levels.

**Tolerable**
Serious, temporary stress responses, buffered by supportive relationships.

**Toxic**
Prolonged activation of stress response systems in the absence of protective relationships.
Toxic Stress: Risks and Contexts

- Poverty
- Sociodemographic risk (e.g., teen mother, single parent, < HS education)
- Intimate Partner Violence
- Parental mental illness
- Parental substance use/abuse
- Compromised parenting and child maltreatment
Toxic Stress
(Gunnar et al., 2009; Fernald & Gunnar, 2009; Cicchetti et al., 2010; Fischer et al., 2011)

- Child toxic stress: strong, frequent, prolonged activation of children's stress-response system
  - increased heart rate/blood pressure
  - release of stress hormones (cortisol)
    - Atypical production in response to stress
    - Atypical diurnal pattern
      - Blunted pattern
  - Lower threshold for response to stress
  - Stress response mediated by caregiving
Toxic Stress (Shonkoff et al., 2009)

• Negative physiologic outcomes
  – Disrupted brain architecture and functioning
  – Effects on other organ systems
    • Premature/LBW African American infants

• Negative child outcomes
  – Health/cognition/mental health

• Root of adult disparities between SES groups re: physical and mental health
Psychological Consequences of Toxic Stress for Young Children

- Increased arousal
  - Increased distress sensitivity to non-stressful events
- Developmental delays
- Executive functioning issues
  - Concentration, Impulse control
- Cognitive/Language delays
- Academic challenges (school readiness)
- Internalizing problems
  - Anxiety, depression
- Externalizing problems
  - Tantrums, oppositionality, defiance, aggression
Toxic Stress

Persistent Stress Changes Brain Architecture

- Normal: Typical neuron—many connections
- Toxic stress: Damaged neuron—fewer connections

Prefrontal Cortex and Hippocampus

Sources: Radley et al. (2004)
Bock et al. (2005)
Extreme Neglect Diminishes Brain Power

Adverse Childhood Experiences Study (ACES)

- Adverse Childhood Experiences (ACEs):
  - Emotional, physical or sexual abuse
  - Domestic violence against the mother
  - Household member with mental illness
  - Household member with substance abuse
  - Household member ever imprisoned

- Predict the 10 leading causes of adult death/disability

ACE Study, Felitti et al. 1998
Adverse Childhood Experiences Study (ACE Study; Fellitti et al., 1998; Anda et al., 2006)

Compared to those with 0 ACEs, people with 4+ adverse childhood experiences were:

- 2.2 times more likely to be smokers
- 4.6 times more likely to be depressed
- 12.2 times more likely to attempt suicide
- 7.2 times more likely to be alcoholics
- 4.5 times more likely to be drug users
- 5.5 times more likely to abuse their partners
Lifespan Effects of ACEs to Health & Well Being

Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

Adverse Childhood Experiences
Disrupted Neurodevelopment
Social, Emotional, and Cognitive Impairment
Adoption of Health-risk Behaviors
Disease, Disability, and Social Problems
Early Death
Death

From acestudy.org
Parenting and Child Development

- Parents major socialization agents for young children (Collins et al., 2000)

- Parenting young children (Berlin et al., 2002; Edwards & Liu, 2002; Ispa et al., 2004; Tamis-Lemonda et al., 2011)
  - Positive parenting linked to host of positive child outcomes in high-risk families
  - High rates of negative parenting among high-risk parents
    - Strong link to negative child outcomes
    - Need to disentangle negative parenting
• contingent responsiveness ("serve and return")
• warmth and sensitivity
• routines and reduced household chaos
• shared book reading and talking to children
• practices promoting children’s health/safety
• use of appropriate (less harsh) discipline
Interventions to support positive parenting practices (NAS, 2016)

• Formal sources of parenting support
  – well-child care
  – center-based child care (Head Start and Early Head Start)
  – home visiting programs

• Interventions targeted to specific populations of parents
  – parents of children with special needs
    – parents facing adversities (Toxic Stress)

• Federal efforts to support parents
  – income assistance
  – nutrition assistance
  – health care
  – housing programs
Elements of Effective Interventions
(NAS, 2016)

Specific elements necessary to address Toxic Stress

• viewing parents as equal partners in service determination
• tailoring interventions to meet the specific needs of families
• integrating services for families with multiple service needs
• creating opportunities for parents to receive peer support
• addressing trauma
• making programs culturally relevant
• enhancing efforts to involve fathers
THREE PATHWAYS TO ADDRESS TOXIC STRESS

**PRIMARY PREVENTION**
- Decreasing poverty, and fostering community and social well-being
- Community-based public health, universal education, and income support approaches

**SECONDARY PREVENTION**
- Reducing environmental risks for toxic stress
- Programs that provide early care and education, parent education, family support, income support

**TERTIARY PREVENTION**
- Providing interventions for children exposed to toxic stress
- Child, parent, dyadic, family, classroom interventions
Evidence-Based Parenting Interventions

• **Triple P – Positive Parenting Program**
  – Multi-level intervention to improve parenting skills and reduce behavior problems

• **Parent-Child Interaction Therapy** (Chaffin et al.)
  – Coaching parent to improve parent-child relationship & parental behavior management skills

• **Attachment and Biobehavioral Catch-up** (Dozier et al.)
  – Short-term intervention with specific targets
    • nurturance and responsivity to infants
    • “overriding” one’s past experience of caregiving
Evidence-Based Parenting Interventions

- **Child-Parent Psychotherapy** (Lieberman et al.; Toth et al.)
  - Infant/early childhood mental health dyadic treatment focused on enhancing parent-child relationship

- **Child FIRST** (Lowell et al.)
  - Relationship-based infant mental health approach
  - Parent-child psychotherapy and case management

- **Promoting First Relationships** (Kelly, Spieker et al.)
  - Infant mental health approach, use of video-coaching
Evidence-Based Parenting Interventions

- **Family Check-Up** (Dishion, Shaw et al.)
  - Short-term intervention to promote positive parenting and behavior management

- **Safe Care** (Lutzker et al.)
  - Parent-child interaction; safety; maltreatment reduction

- **The Incredible Years** (Webster-Stratton et al.)
  - Parent management, group-based intervention
BUFFERING TOXIC STRESS RESEARCH CONSORTIUM

ACF’s Early Head Start – University Partnerships

New York University
University of Colorado
University of Delaware
University of Denver
Washington University
University of Maryland

GOALS
• Validate toxic stress (physiologic measures of child stress regulation)
• Implement and evaluate evidence-based parenting intervention within EHS
UM Buffering Toxic Stress Project Design

Randomized Trial
- EHS + Attachment and Biobehavioral Catch-up (ABC)
- EHS + Book-of-the Week (BOW)

Implementation Study
- Pilot Study & RCT
- Qualitative & Quantitative

Validating Toxic Stress
- Baseline and Post-Test Risk Data
- Child Physiologic Data at Post-test
Attachment & Biobehavioral Catch-up (ABC) Program

- Developed by Mary Dozier, University of Delaware
- Grounded in attachment theory and research
- Manualized intervention
- Two randomized trials with children in child welfare
  - Foster & Birth parents
- 10 sessions with mother-infant dyads at home
  - Use of videotape and in-the-moment commenting
ABC Content

Parental nurturance

Following child’s lead with delight

Reducing threatening and/or frightening caregiving behavior

“Overriding” one’s own history and/or non-nurturing instincts

Exclusive focus on these “target” behaviors
Benefits of ABC

Randomized control trials

• *Infants/toddlers in foster care*
  – More likely to be securely attached to foster parents
  – More normal diurnal patterns of cortisol production

• *Infants/toddlers in Child Protective Services (alternative response)*
  – Mothers showed more sensitivity to infants
  – Infants less likely to have disorganized attachment and more likely to be securely attached

Dozier et al., 2006; 2007; 2008; 2009; Bernard & Dozier, 2012
Integrating ABC into Home-Based EHS

• Supplemental parenting intervention feasible
• Resources for service delivery
  – Videotaping/Technology
• Training of EHS staff
  – Home visitors
  – Mental health consultants
• EHS ≠ ABC
• Sustainability (fidelity)
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<thead>
<tr>
<th></th>
<th>ABC</th>
<th>Control</th>
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<tbody>
<tr>
<td></td>
<td>$(n = 104)$</td>
<td>$(n = 104)$</td>
</tr>
<tr>
<td>Mom Latina</td>
<td>88%</td>
<td>87%</td>
</tr>
<tr>
<td>Mom Age (Mean [SD])</td>
<td>30.7 (6.4)</td>
<td>31.2 (6.5)</td>
</tr>
<tr>
<td>Partner (1 = married/w. partner)</td>
<td>82%</td>
<td>78%</td>
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<tr>
<td>Mom Education (1 = HS/GED+)</td>
<td>53%</td>
<td>57%</td>
</tr>
<tr>
<td>Mom Employed (1 = yes)</td>
<td>41%</td>
<td>37%</td>
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<tr>
<td>Child Age (Mean [SD])</td>
<td>12.6 (4.1)</td>
<td>13.2 (4.0)</td>
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<tr>
<td>Child Sex (1 = female)</td>
<td>47%</td>
<td>55%</td>
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### PARTICIPANT DESCRIPTIVES

#### PARTICIPANT TOXIC STRESS

- Maternal history of child maltreatment (CTQ): 38%
- Intimate partner violence (HITS): 21%
- Self-reported “parenting stress” (PSI): Modest (mean of 65 on scale of 36-180)
- Symptoms of clinical depression (CES-D ≥ 16): 21%

#### INTERVENTION/RESEARCH

- Completion of Early Head Start + ABC: 87%
- Average duration for 10 ABC sessions: 13 weeks
- Completion of post-intervention assessments:
  - ABC Group: 96%
  - Control Group: 99%
**RESULTS**

Post-Intervention Parenting Behaviors

- **Sensitivity**: $\beta = 0.13^*$
- **Positive Regard**: $\beta = 0.11^\dagger$
- **Intrusiveness**: $\beta = -0.36^{***}$
- **Sensitivity Composite**: $\beta = 0.22^{***}$

*Note.* Regression analyses controlled for pre-intervention parenting behaviors.
## RESULTS
Post-Intervention Parenting Behaviors

<table>
<thead>
<tr>
<th></th>
<th>ABC Group (Pre-Post Difference)</th>
<th>Effect Size (Cohen’s $f^2$) (ABC vs. Control)</th>
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</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>0.24</td>
<td>0.02 $\text{Small}$</td>
</tr>
<tr>
<td>Positive Regard</td>
<td>0.23</td>
<td>0.05 $\text{Small}$</td>
</tr>
<tr>
<td>Intrusiveness</td>
<td>0.54</td>
<td>0.19 $\text{Medium}$</td>
</tr>
<tr>
<td>Sensitivity Composite</td>
<td>0.34</td>
<td>0.09 $\text{Small-Medium}$</td>
</tr>
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Note: $f^2 = 0.02$, $f^2 = 0.15$, and $f^2 = 0.35$ = small, medium, and large effect sizes (Cohen & Cohen, 1983).
Toxic stress detrimental to early development and leads to negative physical, developmental, and mental health sequelae in adulthood.

Promoting positive early parent-child relationship critical goal of parenting interventions
- Can reduce effects of toxic stress

Evidence-based parenting intervention promising strategy for buffering children against toxic stress.