MATERNAL DEPRESSION AND THE INTERGENERATIONAL TRANSMISSION OF SELF-REGULATION: EVIDENCE FROM A NATIONAL SAMPLE

Claire E. Baker, PhD
National Center for Children and Families
Columbia University

Today’s SEMINAR

- Overview of the problem
- Presentation of the research study as well as brief discussion of replications and extensions
- Connecting this research to Life Course Health Science Research
- Brief discussion of next steps
- Audience questions and comments

**OVERVIEW OF THE PROBLEM**

1 in 5 women will suffer from a maternal mental health disorder like postpartum depression.
WHY FOCUS ON DEPRESSION?

• According to the CDC, depression is a leading cause of global disability and the second leading cause of global disease burden among people 15–44.

• Women are twice as likely as men to report lifetime history of major depressive episode.

WHY FOCUS ON DEPRESSION?

• Maternal depression constitutes a major mental health and parenting concern.

• Depression rates are highest among women aged 20 to 40 who have children.
OVERVIEW OF THE PROBLEM

Challenges

- Poor parent mental health
- Lack of identification and treatment
- Socio-demographic risk factors

Optimal Health Resources

- Quality of parenting support
- Quality of home environments
- Quality of scaffolding

Early Childhood Emotional and Behavioral Health

TWO APPROACHES TO DEVELOPMENTAL PROBLEMS

Bioecological Models of Development:
Person, Process, Context and Time

The Bioecological Approach
TWO APPROACHES TO DEVELOPMENTAL PROBLEMS

Family Stress Model:
Identify and explore stressors that have an impact on parent-child relationships

COMBINING TWO APPROACHES IN DEVELOPMENTAL RESEARCH

Family Stress Theory
Bioecological Theory
maternal depression

- **Definition:** A condition of general emotional dejection and withdrawal; sadness greater or more prolonged than warranted by any objective reason.

- **Caveat:** Clinical depression and self-report of depressive symptoms should not be thought of as interchangeable, although both are used to assess “depression” and are often discussed interchangeably in the literature.

- **Operationalized:** Self-report measure of depressive symptomology (i.e., Center for Epidemiological Studies of Depression scale developed by the National Institute of Mental Health).

- **Empirical Evidence Summary:** Studies have shown that mothers who report higher levels of depressive symptoms often engage in less positive parenting practices, which in turn predicts less optimal child development (e.g., Paulson et al., 2009)
Early Parenting

- **Definition:** Parenting is a multidimensional construct that reflects mothers and fathers goals for socializing their children.

- **Operationalized:** Self-report measure of maternal warmth and home learning stimulation (items selected from the Home Observation for Measurement of the Environment scale).

- **Empirical Evidence Summary:** Family processes critical to the emergence of EF and behavior competence play out across early childhood—a period of dramatic expansion in children's brain development, social relationships, and expectations for goal-directed behavior (e.g., Blair, 2002). As such, parenting tends to have a long-term impact on children.

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early childhood mental health: executive function (ef)

- **Definition:** Executive function (EF) is an aspect of self-regulation that allows children to exert control over their attention, cognition, and behavior over time and across changing contexts (Blair, 2002).

- **Operationalized:** Cognitive flexibility: Dimensional Change Card Sort ($\alpha = .93$). Working memory: Numbers Reversed subtest of the Woodcock-Johnson III Tests of Cognitive Abilities ($\alpha = .96$). Inhibitory control: teacher-report items that assessed children's ability to plan and inhibit appropriate responses when following instructions or in novel situations ($\alpha = .87$).

- **Empirical Evidence Summary:** Classroom-based intervention showed that enhancing EF during early childhood can reduce poverty-linked deficits in children's school readiness (e.g., Blair & Raver, 2014).
early childhood mental health:
EXTERNALIZING SYMPTOMS

• **Definition**: Problem behaviors that are directed toward the external environment. They include physical aggression, disobeying rules, etc.

• **Operationalized**: Social Skills Rating Scale: Teachers reported how often children demonstrated the following classroom behaviors (a) arguing, (b) fighting, (c) getting angry, (d) acting impulsively, and (e) disturbing ongoing activities ($\alpha = .78$).

• **Empirical Evidence Summary**: Research on parenting and child behavior suggests that warm, cognitively stimulating parenting reduces children’s externalizing behaviors (e.g., Buschgens) and some ADHD research suggests that children’s EF skills may mediate links between parenting and the emergence of externalizing behaviors.

linking MATERNAL DEPRESSION, early parenting AND CHILD development

• Children of mothers with elevated depressive symptoms are at increased risk for a number of difficulties that span physiological, emotional, social, and cognitive domains (e.g., Hoffman et al. 2006).

• Given the accumulation of evidence indicating that children of depressed mothers are at increased risk for difficulties across multiple domains, understanding the mechanisms by which this vulnerability occurs is critical.

• One possible mechanism for these associations involves problematic mother-child interactions based on parenting deficits associated with depressive disorder.
Early Risk Exposure/demographic COVARIATES

DEMOGRAPHICS
- Child age
- Child gender
- Enrolled in preschool program (e.g., Head Start)
- Race/ethnicity

RISK EXPOSURE
- Maternal age
- Maternal education
- Poverty
- Neighborhood safety
- Family structure (e.g., single vs. two-parent families)
- Total household size

METHODS
Research QUESTIONS

• **RQ1**: What are the associations among maternal depression, parenting, children's EF, and externalizing behavior problems?

• **RQ2**: Are the associations among maternal depression and children's EF mediated by parenting?

• **RQ3**: Are the associations among parenting and children's externalizing behavior problems mediated by children's EF?

Research Hypotheses

• **H1**: Higher levels of maternal depressive symptoms would be associated with lower EF scores, less optimal parenting practices, and higher externalizing behavior scores.

• **H2**: Associations among maternal depression and children's EF would be mediated by parenting (i.e., warmth and home learning stimulation).

• **H3**: Associations among parenting and children's externalizing behavior problems would be mediated by children's EF.
Data Source

Early Childhood Longitudinal Study Kindergarten Class of 2010–2011 (ECLS-K) (N=18,174) Mother-Child Dyads
48% White, 23% Hispanic, 13% African American, 8% Asian, and 2% Native American

DATA COLLECTION TIMELINE

- Parenting Qs: Fall, 10
- Depression Scale Administered: Fall, 10
- Teacher Questionnaires: Spring, 11
- Child EF Assessment
- Externalizing Behaviors Measured
Proposed Conceptual Model

<table>
<thead>
<tr>
<th>FAMILY RISK</th>
<th>FAMILY PROCESSES</th>
<th>CHILD EF</th>
<th>CHILD BEHAVIOR</th>
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<tbody>
<tr>
<td>MATERNAL DEPRESSION</td>
<td>EARLY PARENTING</td>
<td>EXECUTIVE FUNCTION</td>
<td>EXTERNALIZING BEHAVIOR PROBLEMS</td>
</tr>
</tbody>
</table>

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TESTING AN ALTERNATIVE MODEL

Analytic strategy

- **RQ1:** What are the associations among maternal depression, parenting, children's EF, and externalizing behavior problems?
  - Examined inter-correlations among our “manifest” variables and latent correlations among focal variables.

- **RQ2:** Are the associations among maternal depression and children's EF mediated by parenting? **RQ3:** Are the associations among parenting and children's externalizing behavior problems mediated by children's EF?
  - Used structural equation models in which maternal depression, maternal warmth, home learning and EF were represented as latent variables.
# Preliminary Results

**Table 1**  Inter correlations, means, standard deviations, and ranges for key study variables (N = 18,174)

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
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<tbody>
<tr>
<td>1. Cognitive flexibility</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.55</td>
<td>1.20</td>
<td>0.00–6.00</td>
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<tr>
<td>2. Working memory</td>
<td>0.20**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.498</td>
<td>17.14</td>
<td>40.00–175.00</td>
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<tr>
<td>3. Inhibitory control</td>
<td>0.14**</td>
<td>0.24**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.08</td>
<td>1.30</td>
<td>1.00–7.00</td>
</tr>
<tr>
<td>4. Externalizing behaviour</td>
<td>-0.08**</td>
<td>-0.15**</td>
<td>-0.71**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td>1.64</td>
<td>0.64</td>
<td>1.00–4.00</td>
</tr>
<tr>
<td>5. Maternal depression</td>
<td>-0.04**</td>
<td>-0.09**</td>
<td>-0.08**</td>
<td>0.06**</td>
<td>1.00</td>
<td></td>
<td></td>
<td>7.41</td>
<td>2.45</td>
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<td>6. Maternal warmth</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>-0.02**</td>
<td>-0.12**</td>
<td>1.00</td>
<td></td>
<td>15.02</td>
<td>1.47</td>
<td>2.00–16.00</td>
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<td>7. Home learning</td>
<td>0.03**</td>
<td>0.07**</td>
<td>0.02</td>
<td>-0.01</td>
<td>-0.05**</td>
<td>0.19**</td>
<td>1.00</td>
<td>14.11</td>
<td>2.67</td>
<td>2.00–20.00</td>
</tr>
</tbody>
</table>

* *p < 0.05.
** *p < 0.01.

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# Latent Correlations

**Table 2** Latent correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
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<td>1. Externalizing behaviour problems</td>
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<td></td>
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</tr>
<tr>
<td>2. Executive functions</td>
<td>-0.71**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Home learning</td>
<td>-0.02</td>
<td>0.04**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Maternal warmth</td>
<td>-0.04**</td>
<td>0.04**</td>
<td>0.28**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>5. Maternal depression</td>
<td>0.08**</td>
<td>-0.09**</td>
<td>-0.08**</td>
<td>-0.14**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

** *p < 0.01.
Summary of findings

- **RQ1**: What are the associations among maternal depression, parenting, children's EF, and externalizing behavior problems?
  - Maternal depression was negatively related to children's EF and positively related to children's externalizing behaviors.

- **RQ2**: Are the associations among maternal depression and children's EF mediated by parenting?
  - The negative association between maternal depression and children's EF was completely mediated by maternal warmth and home learning stimulation.
Summary of findings

- **RQ3**: Are the associations among parenting and children’s externalizing behavior problems mediated by children’s EF?
  
  - As frequently considered in the ADHD literature, we found an indirect effect from maternal parenting practices to children’s externalizing behaviors through EF, such that children with stronger EF skills had fewer behavior problems.

Limitations

- Self-report measures for maternal depression and parenting
- Lack of information about father depression and parenting
- Small to moderate effect sizes
- Focused on the kindergarten year (i.e., sensitive period)
The Head Start Family and Child Experiences Survey of 2009 (FACES)

IMPLICATIONS FOR life-COURSE HEALTH RESEARCH

- Optimizing maternal and child emotional and behavioral health.
- Provides novel insight into processes that support the intergenerational transmission of emotional and behavioral health in a national sample.
- Identifies dynamic developmental relationships that highlight risk and protective factors in maternal and child health trajectories.
- Underscores the impact of family-level factors on children’s health and development.
- Continued research in this area may improve health trajectories and potentially alleviate disparities in maternal and child health.

Next steps

A transdisciplinary research agenda focused on
~Producing actionable intelligence for targeted interventions with mothers, fathers and young children.

Cultural considerations in early childhood behavioral health
~Exploring nuances in the developmental and health trajectories of ethnic minority populations (i.e., exploring within-group variability).

Early childhood intervention research targeting key developmental processes and time periods (two-generation approach and Head Start programs)
~Pursuing funding for research and interventions that examine the impact of adverse experiences on health and development with a special emphasis on health disparities in vulnerable populations.
QUESTIONS