Addressing Toxic Stress and Adverse Childhood Experiences in Partnership with Mothers: the MOMS Partnership

Dr. Megan V. Smith
Departments of Psychiatry & Child Study Center
Yale University School of Medicine
Division of Social & Behavioral Sciences
Yale School of Public Health

megan.smith@yale.edu
Disclosures

There are no conflicts of interest

All photographs are used with informed consent
Two Generation Approach

Changing Outcomes For Children Facing Adversity Requires Transforming the Lives of Adults Who Care for Them

Violence
Mental Illness
Substance Abuse
Adverse childhood Experiences

Stress
Poverty

Strengthening foundational skills for wellbeing, parenting, employability, and responsible citizenship

Courtesy of Jack Shonkoff, Adapted by MVS
Serve & Return Builds Brains and Skills

Serve and Return

Courtesy: Harvard Center on the Developing Child
The Absence of Serve & Return Activates the Stress Response

Disruption of serve and return

The Biology of Adversity: 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.

Adapted from the National Scientific Council of the Developing Child
Sources of Toxic Stress in Young Children

- **Neglect & Maltreatment**: 7.5%
  - Source: Finkelhor et al. (2005)

- **Postpartum Depression**: 13%
  - Source: O'Hara & Swain (1996)

- **Parental Substance Abuse**: 14%
  - Source: SAMHSA (2009)

Adapted from the National Scientific Council of the Developing Child
Maternal Mental Health: Overview of the Epidemiology

- 20.6 million children live with an adult with a mental illness.\textsuperscript{1,2}

- Children of depressed as compared to non-depressed parents are more likely to develop psychiatric illnesses, and are at greater risk for social, cognitive, and medical difficulties.\textsuperscript{2}

- 69.7 percent of depressed low-income mothers with young children have a condition classified as severe or very severe—to a degree that disrupts home, social, or work life.\textsuperscript{3}

\textsuperscript{2} National Academies of Science, 2010
\textsuperscript{3} National Survey of Drug Use and Health (NSDUH), 2008–2010,
## Maternal Depression: Central Role in Development

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Impact of Depression on Children</th>
</tr>
</thead>
</table>
| **Adverse Birth Outcomes**           | Premature delivery: $3.4x$ more likely  
Low birth weight baby: $4x$ more likely                                                   |
| **Developmental Milestones**         | Height-for-age at age 5: $40\%$ increased odds of being $\leq10^{\text{th}}$ percentile              |
| **Emergency Dept. Visits - Child**   | Asthma: $2-3x$ more likely to have visit in the past year                                        |
| **School Readiness & Performance**   | $30\%$ less likely to be Kindergarten ready  
IQs: $4.5$ points lower                                                                 |
| **Poor Adult Health**                | Smoking: $1.8 - 2.8x$ more likely  
Poor general or mental health: $1.3 - 2.3x$ more likely  
Limited activity: $1.8-3x$ more likely |
Public Sector Systems Affected by Maternal Depression

- Public Assistance
- Child Welfare
- Maternal Depression
- Education
- Early Intervention
- Health Care System

Adapted from Sontag-Padilla, RAND 2013
Depressed Mothers are the “Hardest to Reach” but Most Necessary to Engage in Two-Gen Approach

- Between 28 and 61 percent of mothers in home visiting programs screened positive for depression.¹
  - Program effects suggest largest effect for mother’s with moderate to high depressive symptoms.²,³
  - But these mothers usually drop out early or never enter programs.⁴

- 10,367 participants 66 implementation sites: mothers who had the highest dropout rate were:
  - younger
  - unmarried
  - African American
  - depressed

¹Ammerman, RT. *Aggression and Violent Behavior* 15. 2010.
Current Intervention Approaches Can Be Strengthened

Nationally, Low-income Mothers do not Receive Depression Treatment

- National estimates from the Medical Expenditure Panel Survey showed nearly 40 percent of mothers with depression had not received treatment, and only 35 percent of those treated had received adequate treatment\(^1\)

- Low-income women, the uninsured, African American women, and Hispanic women are at even greater risk of receiving no or inadequate treatment\(^2,3,4\)

---

Yvonne and Carmen
Tips for You (parent with mental illness) to reduce your child's risk of depression and anxiety

- Establish and maintain a good relationship with your child.
- Support increasing autonomy of your toddler.
- Minimize conflict in the home.
- Help your child to deal with anxiety.
A profile of Yvonne and Carmen

- Average income = $12,500/ year
- High school graduates, fifth grade reading level
- Interpersonal violence
- Transient---average of five moves in the last year
- Food insecurity
- Diabetes
Meta-Analysis: Treatment of Mother = Improvement in Child

• Of the six studies that examined children's psychosocial outcomes, five found that mothers' treatment was associated with child improvements.

• Treatment of maternal depression was predictive of improvement in child academic functioning and mother-child relationships and interactions.

Gunlich & Weissman, 2008 JAACP, 47 (4)
Ensuring the Emotional Health of Our City’s Families
The mission of the New Haven MOMS Partnership is to transform service delivery systems for mothers and children through community and neighborhood-based resources dedicated to wellness; thereby strengthening generations of families to flourish and succeed.
Our Target Population

Low-income female caregivers with children under the age of 18.
Step 1: Formalize Partnerships

- Clifford Beers Guidance Clinic
- Housing Authority of New Haven
- New Haven Health Department
- New Haven Healthy Start
- New Haven Public Schools
- State of CT Department of Children & Families
- State of CT Department of Social Services
- The Diaper Bank
- Yale School of Medicine
One Critical Reason to Formalize Participation of Caregivers

- The “gulf” or “chasm” created between research and practice ¹
  - On average 17 years elapse between publication and implementation ²,³

1 Chambers, DA. *Adm Policy & Health* (2012)
2 Balas, EA. *Yearbook of Medical Informatics* (2000)
Step 2: Community Mental Health Ambassadors

- Outreach, engagement, brief intervention

- “Task shifting” and “task sharing”

- 10 CMHAs: significant changes in attitudes, behaviors, sense of competency over 6 months of employment

- 43 CMHAs trained across the City of New Haven
Step 3: Assess “Goals”

- Conduct “Environmental Scan”

“When was the last time you did something for yourself?”

“What is your goal for this week?” For yourself? For your child(ren)?

“Any one thing, service or person you depend on for support?”

Claydon, E, Kruse A, Smith, MV. J Community Mental Health
Goals of Mothers

1.) Securing stable employment

2.) “Making my child proud”

Support: Food stamps, housing
Barriers to Goal Attainment

1.) Stress

2.) Social Isolation
How Moms Talk About “Stress”

• “Not having a full-time job and living paycheck to paycheck.”

• “Working and getting paid small amounts of money”

• “Being a single mom with three sons and not being able to give them everything they want”

• “Not being able to provide for my family in a way that satisfies me”

• “Feel unable to provide children with friends, experiences”

• “Feeling so worried about where we will sleep that I cannot help but get angry at my children.”
Emotional Health Need (N=2,213)
Level of Violent, Non-Violent, and Domestic Crime and Percent of Mothers Reporting Poor Mental Health by New Haven Neighborhood (2008-2012)

Legend

New Haven Neighborhoods
Neighborhood level of violent, non-violent, and domestic crime
- Low
- Mid-low
- Mid-high
- High

Percent of mothers reporting poor mental health
- 0.0%
- 0.1% - 25.0%
- 25.1% - 44.4%
- 44.5% - 53.2%
- 53.3% - 61.1%
Preventing ACES: Operationalizing Poverty for Parents

Why Diapers Matter

Without Diapers — Babies Cannot Participate in Early Childhood Education
Without Childcare — Parents Cannot Go to Work

Why Does Early Childhood Education Matter?

Students that participate in early childhood education are 2.5 times more likely to go on to higher education.

Source: Economic Impacts of Early Care and Education in California. UC Berkeley Center for Labor Research and Education

National Diaper Bank Network
125 CHURCH STREET, SUITE 611
NEW HAVEN, CT 06510
203.821.7348
DIAPERNETWORK.ORG

Percent of Mothers Reporting Diaper Need by New Haven Neighborhood

Legend
New Haven Neighborhoods in Reporting Diaper Need

The online version of this article, along with updated information and services, is located at the Pediatric Talent Network at
http://pediatrics.ajpgi.org/content/early/2013/05/15/peds.2013-4817

American Academy of Pediatrics
American Academy of Pediatrics

Yale SCHOOL OF MEDICINE
Step 4: Universal Strategies for Two Generations Matched to Goals

- Promote Family Economic Success = Workforce
  Effect size for increasing family household income $4K annually (0.41)

- Promote Maternal Mental Health = CBT
  Effect size for cognitive gains in children as a result of treating maternal depression (0.42)

Smith MV. Under Review Psych Services
Step 5: Universal Implementation of Interventions to Build Capacity

- “MOMS Stress Management and Job Readiness Courses”
- 8 and 12-week, skill-building cognitive behavioral therapy (CBT)
- Co-delivered by clinicians and CMHAs
Step 5 (cont): Innovation in Location

- Integration of health in non health settings is essential to addressing chronic health needs.

- Supermarket, Public Housing Complexes, Churches, Laundromats-- “HUBS”

1 IOM. Living Well with Chronic Illness: A Call for Public Action. 2012
Using Technology to Enhance Social Capital

MoMba

NIMH #100456-01
MoMba’s Goals

• Connect new mothers to:
  • Other mothers
  • Infants (attachment)
  • Local resources/health services

• Incentivize positive social networks and enhance social capital and skill building
**CHALLENGES**

- Baby's health
- Community
- Fun
- Surveys

**BANK**

- **Total donations**: 2025
- Donate your hard earned tokens to a Momba mom or the community.

  - **Donate to:**
    - A Momba Mom

  - **Donate to:**
    - National Diaper Bank Network
(reply to Mahogany P) Aww she turn the Big 1 how time fly

Jul 24  Mahogany P  ➔ reply
(reply to Tina A) Yes only a few more weeks

Aug 4  Mahogany P  ➔ reply
My baby will b 1 in 4 days n she still isn’t walking independently ugh

Aug 4  Meghan C  ➔ reply
(reply to Mahogany P) Kylia isn’t either, don’t worry, she will when she ready!!

Aug 7  Mahogany P  ➔ reply
(reply to Meghan C) Thanx
MoMba Impacts

- On average, 21.8 chat messages were sent per participant over the full study period.

- When adjusting for baseline technical literacy, the maternal sensitivity score is, on average, 0.52 units higher in the intervention group vs. control group (p=0.041).

- The MoMba group had a significantly greater social capital score at 12 months compared to the control group (p=0.018).

- The MoMba group had a significantly greater social network score (p=0.042). On average, for every one month from intake, there is a 0.40 unit increase in the social network score among those in the MoMba group.
Future Directions

Linking MOMS Services to Intended Outcomes & the State Budget

**MOMS Services**
- Cognitive Behavior Therapy (CBT)
- Workforce Development

**Expected Outcomes**
- ↓ Clinically Significant Symptoms of Depression
- ↑ Employment

**Additional Outcomes Evaluated**
- ↑ Earnings, Taxes; ↓ Unemployment Claims
- ↓ Child Asthma Attacks and ED visits
- ↑ Developmental Milestones
- ↑ Use of Existing TANF & Medicaid Services

**Cost/Budget Linkages**
- ↓ State Assistance Need, ↑ Tax Revenues
- ↓ ED Costs
- ↓ Early Intervention Spending
- ↑ TANF and Medicaid ROI

Courtesy of Third Sector Capital Partners & Yale MOMS
Acknowledgements

People: MOMS Partnership mothers, Ruth Arnold, Commissioner Roderick Bremby, Marijane Carey, Elizabeth Claydon, Kathryn Cochran, Cerella Craig, Janice Gruendel, Heather Howell, Anna Kruse, Kia Levey, Michael Perlmutter, Linda Mayes, John Padilla, Natasha Rivera-LaButhie, Suzi Ruhl, Emily Samuel, Kimberly Streater, Fred Shic, Kimberly Yonkers, MOMS Guide Team

Funders:
Annie E. Casey Foundation
Kresge Foundation
Community Foundation for Greater New Haven
Charitable Gift from Thorne Family Trust
Child Health & Development Institute
Harvard Center on the Developing Child
Oscar Mayer Foundation
NIDA K12DA031050, NCI R01CI45631
NIMH R34MH100456-01
U.S. Office of Women’s Health
Yale-New Haven Hospital

Yale Center for Clinical & Translational Research