PROMOTING EFFECTIVE PARENTING BEHAVIOR AND ENGAGEMENT IN PARENTING INTERVENTIONS AMONG DIVERSE PARENTS OF CHILDREN WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES: THE ROLE OF MINDFULNESS

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FAMILIES AND CHILD DEVELOPMENT

- Families are one of the most important influences on a child’s development.
- Predictive of outcomes in every domain of development
  - Cognitive
  - Communication/language
  - Physical/motor
  - Social
  - Emotional
  - Adaptive behavior/self-help
Families and Child Development

- Families may have a stronger influence on development when children have developmental risk
  - Intensify risk
  - Serve a protective function
Children with IDD: A Key Risk Group

- Children with intellectual and developmental disabilities (IDD) are more likely to develop a psychiatric disorder compared to typically developing children (TD)
  - Third to half of children with IDD meet criteria for dual diagnosis
  - Ratio of 3:1 (ID:TD)
    - Baker, Neece, Fenning, Blacher, Crnic, 2010
- Diagnostic overshadowing
CHILDREN WITH IDD: A KEY RISK GROUP

- **Individual Outcomes**
  - Academic problems
  - Failure in community living arrangements
  - Social isolation and rejection
  - Reduced employment

- **Family Outcomes**
  - Parental stress
  - Increased out of home placements

- **Social Outcomes**
  - High social cost
CHILDREN WITH IDD: A KEY RISK GROUP

- Lack of experience in assessment and treatment of dual diagnosis
CHILDREN WITH IDD: A KEY RISK GROUP

- Why are individuals with IDD at increased risk for psychopathology?
Collaborative Family Study

Child Developmental Status (IDD or TD)

Family Process

Psychopathology or Competence

Child Self-Regulation

Baker, Blacher, Crnic, Edelbrock, 2002
COLLABORATIVE FAMILY STUDY

Child Developmental Status (IDD or TD)

Family Process

Psychopathology or Competence

Child Self-Regulation

Baker, Blacher, Crnic, Edelbrock, 2002
SUMMARY OF NEECE FINDINGS FROM CFS

- Important to consider multiple directions of effect and test bidirectional relationships
- Parenting stress consistently emerged as an important predictor of:
  - Child social skills (Neece & Baker, 2008)
  - Child behavior problems (Neece, Green, & Baker, 2012)
  - Child ADHD symptoms (Baker, Neece, et al., 2010)
LIMITATIONS OF CURRENT STANDARD OF CARE

- Although parental stress is associated with negative child outcomes it is rarely addressed in interventions targeting child problems.

- Need to consider parental stress and mental health in the treatments of child behavior problems and examine the indirect effects of such interventions on child outcomes.
The MAPS Project

Goal:
- Determine if we can reduce parental stress through intervention
  - Mindfulness-Based Stress Reduction (MBSR)
- Investigate whether experimentally manipulating parental stress leads to reductions in child behavior problems
MAPS METHODOLOGY

- N=80 children with mixed intellectual and developmental disabilities and their families
  - 61.4% had ASD diagnosis
  - Majority were Latino
  - 46% families <$50k annually
- Randomly assigned to immediate MBSR group (N=39) or waitlist-control group (N=41)
  - Used traditional 8-week MBSR program with retreat
- Assessments at baseline, post-intervention, and 6-months follow up
SUMMARY OF MAPS FINDINGS

- MBSR was associated with reduced stress in parents and depression as well as improvements in satisfaction with life
  - Neece, 2014
  - Chan & Neece, 2017

- Children of parents in MBSR group had reduced behavior problems, with significant reduction in withdrawn behavior and attention problems.
  - Chan & Neece, 2017
ADDITIONAL MAPS AIMS

- Examine mechanisms through which parental stress influences child behavior outcomes
  - Family processes, specifically parenting behavior, as a mediator
The Stress-reduction Techniques for Effective Parenting Skills (STEPS) Project

- NICHD-Funded RCT
  - Partnership with Dr. Rachel Fenning and Center for Autism at Cal State Fullerton
- Improvements on MAPS Project
  - Focus on families of young children with ASD, with well-characterized sample
  - Active treatment comparison group (MBSR vs. Psychoeducation)
  - Longitudinal follow-up (6 and 12-mo follow-up)
  - Larger sample of 119 families of children with ASD
  - Student training component
STEPS Model

Parental Reactivity and Negativity

Parenting Stress

Child Externalizing Behavior Problems
STEPS STATUS

- Recruitment complete!
  - N=119 over three cohorts
- Last assessment (12mo FU for cohort 3) will occur May 2022
- Plan to analyze data in Fall of 2022
- Preliminary investigations
  - Comparing feasibility and acceptability of in person vs. online delivery of MBSR (symposium accepted to APA)
  - Examination of association between parental distress and parental warmth and criticism using baseline data from the FMSS
    - Preston, Baker, Fenning, Chan, McGregor, Neece (in preparation)
  - Prevalence and Phenomenology of Anxiety in Preschool-Aged Children with Autism Spectrum Disorder
    - Chan, Fenning, & Neece, (under review)
CONSIDERATIONS FOR DIVERSE FAMILIES

- Participant Enhancement Intervention (Knock & Kazdin, 2005)

- Addressing barriers:
  - Childcare (for in-person delivery)
  - Transportation
  - Maintaining participant contact
  - Bicultural and bilingual staff
  - Participant incentives
  - Provide feedback and support for advocacy
**PRO-PARENTING STUDY**

- Partnerships in Research for Optimizing (PRO) Parenting Study
  - NICHD-funded RCT
    - Partnership with Dr. Laura Lee McIntyre and University of Oregon
- N=212 over 6 cohorts (recruitment complete)

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<td>Cohort 2</td>
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<td>X</td>
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<td>Cohort 3</td>
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<td>Cohort 6</td>
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Figure 1. Study Model of relations among treatment, parenting stress, parenting behavior, and child behavior.
PRO-PARENTING METHOD AND PILOT

- Parents randomly assigned to:
  - BPT with Mindfulness (BPT-M)
    - 6 weeks of MBSR + 10 weeks of BPT
  - BPT with Psychoeducation (BPT-E)
    - 6 weeks of Psychoeducation + 10 weeks of BPT

- Home visit assessments at baseline, post-treatment, 6 and 12 month follow-up

- Lab visit for diagnostic confirmation at baseline

- Pilot Study at LLU
  - BPT-M (N=13) vs. BPT-E (N=14)
  - Outcomes
    - Parent stress
    - Child behavior problems
    - Parenting behavior (mediator)
PRO-PARENTING STUDY PILOT STUDY

Parental Distress Post-Tx

Child Behavior Problems Post-Tx

$d=.78$

$d=.34$
**PRO-PARENTING STUDY PILOT STUDY**

**Child Behavior Problems (Clinical vs. Non-Clinical)**

- **BPT-M**: Blue bar
- **BPT-E**: Dark blue bar

$\text{Baseline} = 67$  
$\text{Post-Tx} = 68$

$d = 0.40$

**Child Behavior Problems (within-group changes)**

- **BPT-M**: Green bar
- **BPT-E**: Purple bar

$\text{Baseline} = 72$  
$\text{Post-Tx} = 66$

BPT-M $d = 0.75$  
BPT-E $d = 0.27$
**Implications**

- Parental stress should be a target for interventions aiming to reduce children’s behavior problems.

- Targeting parent stress can reduce behavior problems indirectly and may improve the efficacy of behavioral interventions.

- Using mindfulness interventions and techniques alongside other EBTs for child psychological disorders may be beneficial.
Families Matter
THANK YOU! CONTACT INFO AND QUESTIONS

- Contact Information
  - Cameron L. Neece, PhD
    - cneece@llu.edu

- Funding
  - NICHD
    - R15 HD091726-01A1
      - Dr. Rachel Fenning
    - R01 HD093367-01A1
      - Dr. Laura Lee McIntyre
  - GRASP funding through LLU
    - Co-PI: Dr. Lisa Roberts, DrPH

- Participating families!
REFERENCES


Mindfulness-Based Stress Reduction

- MBSR is a manual based intervention that includes didactic materials covering the concept of mindfulness and how it can be used in everyday life, mindfulness exercises, and group sharing.

- The program includes:
  - Eight weekly 2.5 hour sessions
  - A day-long meditation retreat after class 6
  - Daily home practice based on audio CDs with instruction
  - Certified MBSR instructor with 20 years experience
RECRUITMENT

- Primary recruitment was through the Inland Empire Regional Center, Southern California.

- Notifications in the university newsletter

- Article in the primary local newspaper (Riverside county)
**Inclusion Criteria**

- Child was between ages 2.5 to 5 years old
- Child was determined by Regional Center or by an independent assessment to have a developmental delay
- Parent reported 10 or more child behavior problems on the Eyberg Child Behavior Inventory
- Parent was not receiving any form of psychological or behavioral treatment at the time of referral
PROCEDURES

Intake assessment (1)

Random assignment: Immediate treatment

Random assignment: Waitlist-control

MBSR

Post-treatment assessment (2)

Post-treatment assessment (2)

MBSR

6-mo follow-up assessment (4)

6-mo follow-up assessment (5)
### Demographic Characteristics of Participants by Treatment Group

<table>
<thead>
<tr>
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<th>Immediate $N = 39$</th>
<th>Waitlist $N = 41$</th>
<th>$t$ or $\chi^2$</th>
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<tr>
<td><strong>Children</strong></td>
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<td></td>
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<tr>
<td>% Male</td>
<td>66.7</td>
<td>75.6</td>
<td>$\chi^2(1) = .78$</td>
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<td>Mean Age in Years (SD)</td>
<td>4.01 (0.94)</td>
<td>4.34 (1.05)</td>
<td>$t(78) = 1.51$</td>
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<tr>
<td>% Caucasian</td>
<td>28.2</td>
<td>22.0</td>
<td>$\chi^2(1) = .42$</td>
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<tr>
<td>% Behavioral Services</td>
<td>51.3</td>
<td>43.9</td>
<td>$\chi^2(1) = .44$</td>
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<td><strong>Participating Parent</strong></td>
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<tr>
<td>Mean Age in Years (SD)</td>
<td>37.72 (8.38)</td>
<td>36.76 (6.06)</td>
<td>$t(76) = -0.58$</td>
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<td>% Married</td>
<td>82.1</td>
<td>68.3</td>
<td>$\chi^2(1) = 2.02$</td>
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<td>Mean Grade in School (SD)</td>
<td>14.72 (3.10)</td>
<td>14.14 (2.67)</td>
<td>$t(78) = -0.89$</td>
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<td>Family Income (% &gt; $50k)</td>
<td>53.8</td>
<td>39.0</td>
<td>$\chi^2(1) = 1.77$</td>
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</table>
Ethnicity Breakdown

- African American
- Asian
- Caucasian
- Latino
- Other

Percentage of Sample

- African American
- Asian
- Caucasian
- Latino
- Other
INCOME BREAKDOWN

Percentage of Sample

<$15k  $15k-$25k  $25k-$35k  $35k-$45k  $45k-$50k  $50k-$70k  $70k-$95k  >$95k
CHILD DIAGNOSTIC DEMOGRAPHICS

- 61.4% “very likely” ASD diagnosis according to GARS-II
- 79.4% enrolled in a special education classroom
- Majority thought to have mild to moderate IQ
Parental Distress at Baseline

Percentage of Sample

Parental Distress Subscale Percentile

<table>
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<td>80-90</td>
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<td>&gt;90</td>
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Research Questions

- Does MBSR significantly reduce parenting stress among parents of children with developmental delays?

- Are reductions in parenting stress associated with subsequent reductions in child behavior problems?

Neece, 2014
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- Are reductions in parenting stress associated with subsequent reductions in child behavior problems?

Neece, 2014
## RESULTS: PARENTAL MENTAL HEALTH

Results of 2x2 Mixed Design MANOVA for Parental Mental Health

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<tr>
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<th>Multivariate $F$</th>
<th>Wilks’s Lambda</th>
<th>$p$-value</th>
<th>Partial $\eta^2$</th>
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<td>TxGrp</td>
<td>5.93</td>
<td>.74</td>
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<td>Time</td>
<td>2.24</td>
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<td>TxGrp X Time</td>
<td>5.91</td>
<td>.74</td>
<td>&lt;.002</td>
<td>.26</td>
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</tbody>
</table>

Chan & Neece, 2017
Parental Stress

Treatment vs. Control

- Baseline
- Assessment 2

$F (1, 61) = 11.18$

$p < .001$

Partial $\eta^2 = .16$

Chan & Neece, 2017
**Parental Depression**

![Chart showing parental depression levels between treatment and control groups.](image)

- **Baseline**
- **Assessment 2**

$F(1, 53) = 18.91$

$p < .001$

Partial $\eta^2 = .26$

* Chan & Neece, 2017
Satisfaction with Life

Treatment       Control

Baseline          Assessment 2

\[ F (1, 51) = 5.33 \]
\[ p < .05 \]
Partial \( \eta^2 = .10 \)

 Chan & Neece, 2017
**Changes Across Intervention**

Intercept ($B_{00}$) = 7.25***; Slope ($B_{10}$) = -0.42***

Neece, 2014
CHANGES ACROSS INTERVENTION

How much does your stress impact your daily life?

Intercept ($B_{00}$) = 6.88***; Slope ($B_{10}$) = -0.29***

Neece, 2014
RESULTS: PARENTING STRESS FOLLOW-UP

- **Mean Parental Distress Score**
  - Intake: 38
  - Post-Tx: 32
  - 6-Mo FU: 32

- Statistical Analysis:
  - $F (2, 86) = 8.61$
  - $p < .001$
  - Partial $\eta^2 = .17$

Chan & Neece, 2017
RESULTS: PARENTAL DEPRESSION FOLLOW-UP

\[ F (2, 86) = 16.56 \]
\[ p < .001 \]
\[ \text{Partial } \eta^2 = .28 \]

Chan & Neece, 2017
RESULTS: SATISFACTION WITH LIFE FOLLOW-UP

\[ F (2, 86) = 11.50 \]

\[ p < .001 \]

Partial \( \eta^2 = .21 \)

Chan & Neece, 2017
RESEARCH QUESTIONS

- Does MBSR significantly reduce parenting stress in this population?

- Are reductions in parenting stress associated with subsequent reductions in child behavior problems?
WITHDRAWN BEHAVIOR

Treatment

Control

$F (1, 65) = 4.51$
$p < .05$
Partial $\eta^2 = .07$

Chan & Neece, 2017
**RESULTS: CHILD EXTERNALIZING BEHAVIORS**

Results of 2x2 Mixed Design MANCOVA for Child Externalizing Behaviors

<table>
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<tr>
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<th>Multivariate $F$</th>
<th>Wilks’s Lambda</th>
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<td>Time</td>
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<td>Bx X Time</td>
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<td><strong>TxGrp X Time</strong></td>
<td><strong>7.90</strong></td>
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<td><strong>.20</strong></td>
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Chan & Neece, 2017
**Attention Problems**

<table>
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<tr>
<td>Assessment 2</td>
<td>4.5</td>
<td>5.5</td>
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</table>

* $F (1, 65) = 10.67$
* $p < .01$
* Partial $\eta^2 = .14$

Chan & Neece, 2017
TEACHER AND OBSERVATIONAL DATA

Teacher Results (Neece, 2014)
- No differences between on any of the TRF subscales at intake.
- After the first round of the intervention, children of parents in the treatment group were reported to have significantly fewer:
  - Externalizing behavior problems ($t=1.82$, $p<.05$, $d=0.91$)
  - ODD symptoms ($t=1.88$, $p<.05$, $d=0.94$)
  - ADHD symptoms ($t=1.90$, $p<.05$, $d=0.95$).

Observational Data
- Decrease in child demandingness during parent-child observation task
  - Chan, Krantz, McGregor, Boostrom & Neece, 2018
Changes Across the Intervention

How problematic has your child's behavior been?

Intercept (B00) = 5.31***; Slope (B10) = -0.10***

Neece, 2014
WITHDRAWN BEHAVIOR FOLLOW-UP

$F (2, 108) = 8.12$
$p < .001$
Partial $\eta^2 = .13$

Chan & Neece, 2017
**Attention Problems Follow-Up**

Mean CBCL Attention Problems

![Bar chart showing mean CBCL Attention Problems across Intake, Post-Tx, and 6-Mo FU]

- **Intake**: High level of attention problems.
- **Post-Tx**: Moderate level of attention problems.
- **6-Mo FU**: Lower level of attention problems compared to Intake.

Statistical analysis:

- \( F(2, 108) = 3.31 \)
- \( p < .05 \)
- Partial \( \eta^2 = .06 \)

*Chan & Neece, 2017*