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

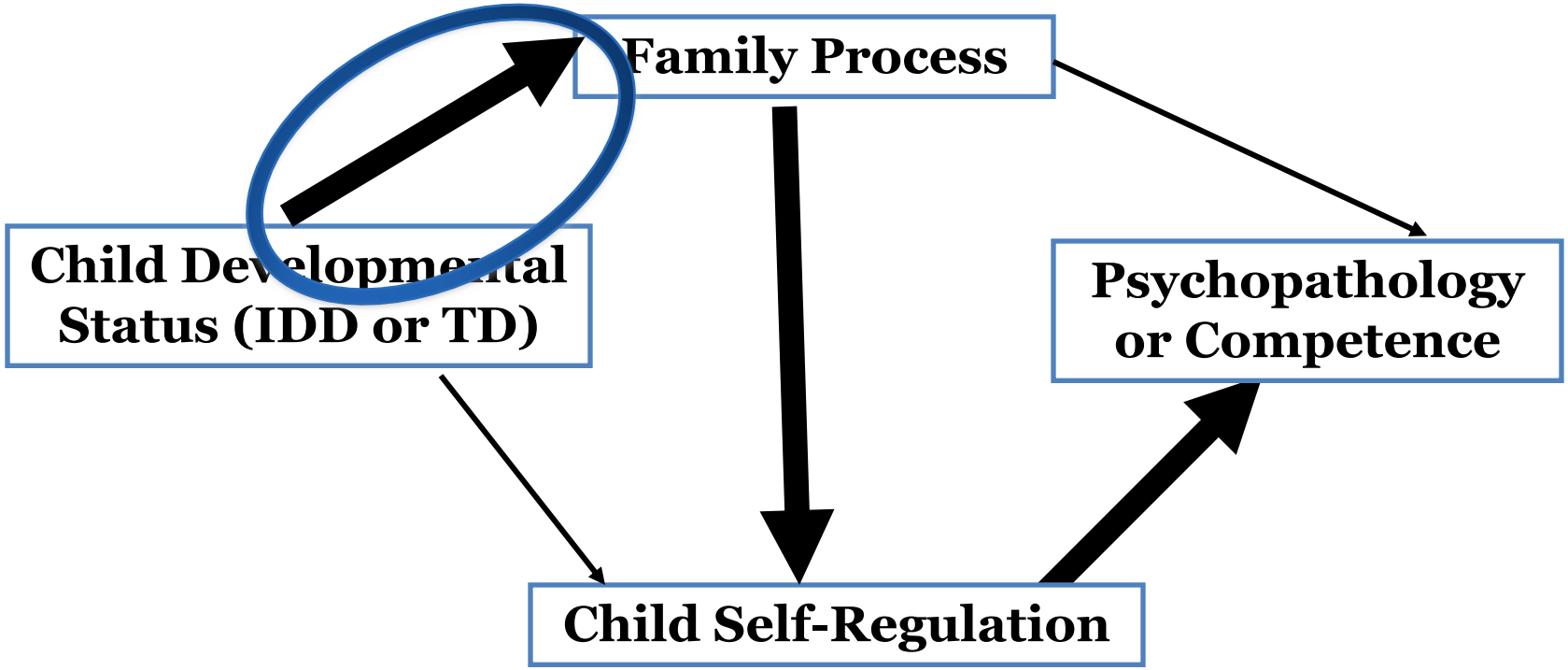
Children with IDD: A Key Risk Group

- Lack of experience in assessment and treatment of dual diagnosis

Children with IDD: A Key Risk Group

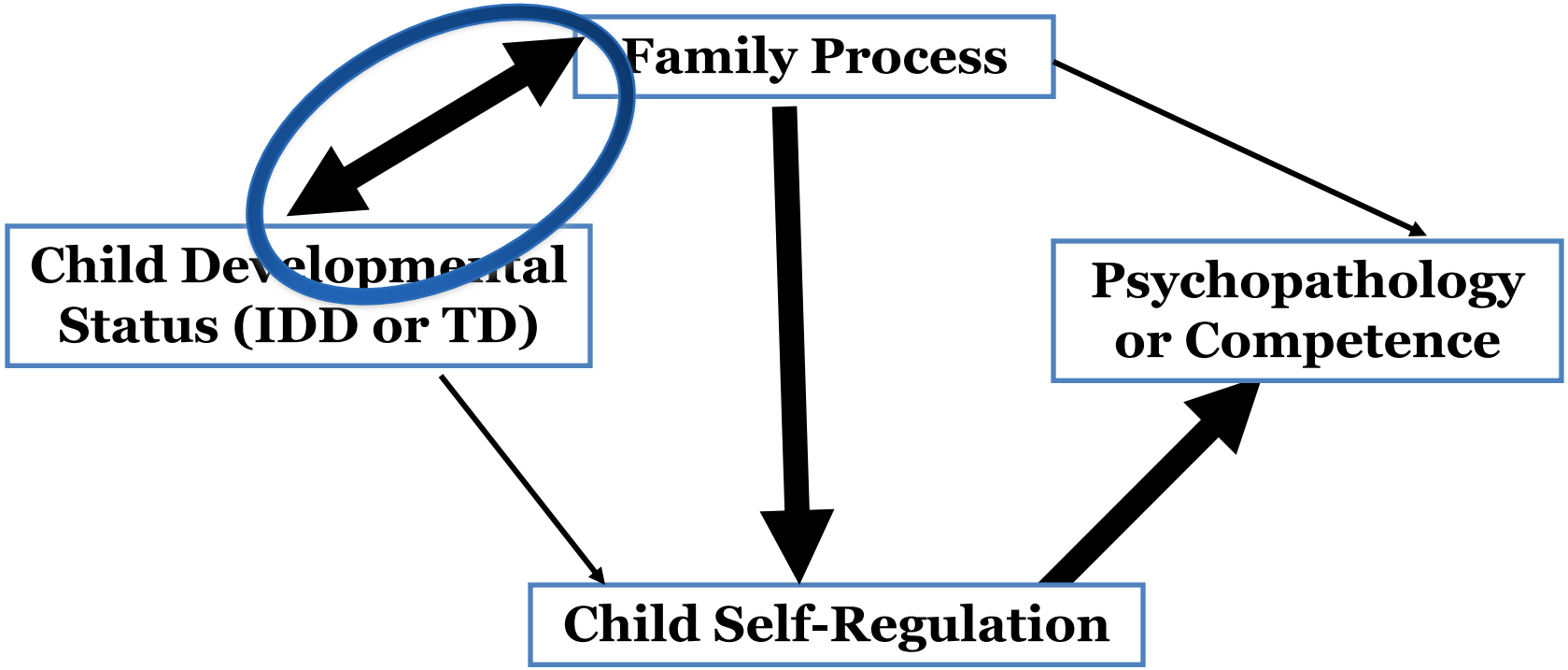
- Why are individuals with IDD at increased risk for psychopathology?

Collaborative Family Study



Baker, Blacher, Crnic, Edelbrock, 2002

Collaborative Family Study



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)

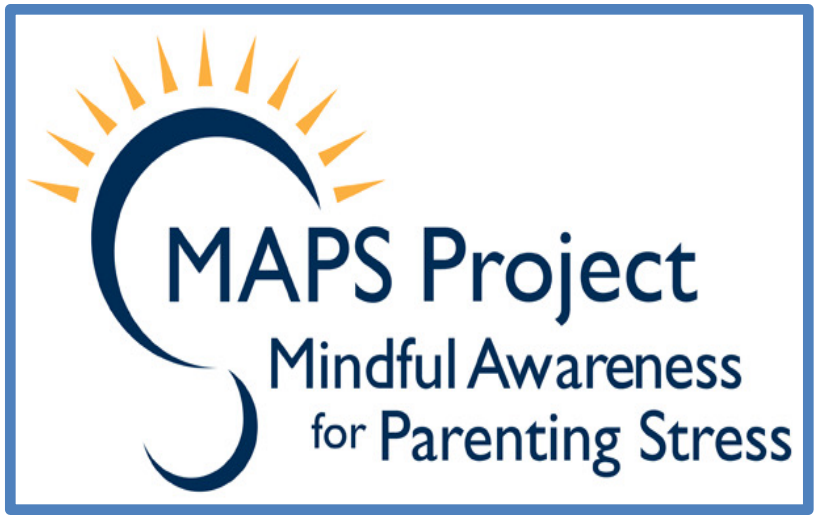
Limitations of Current Standard of Care

- 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

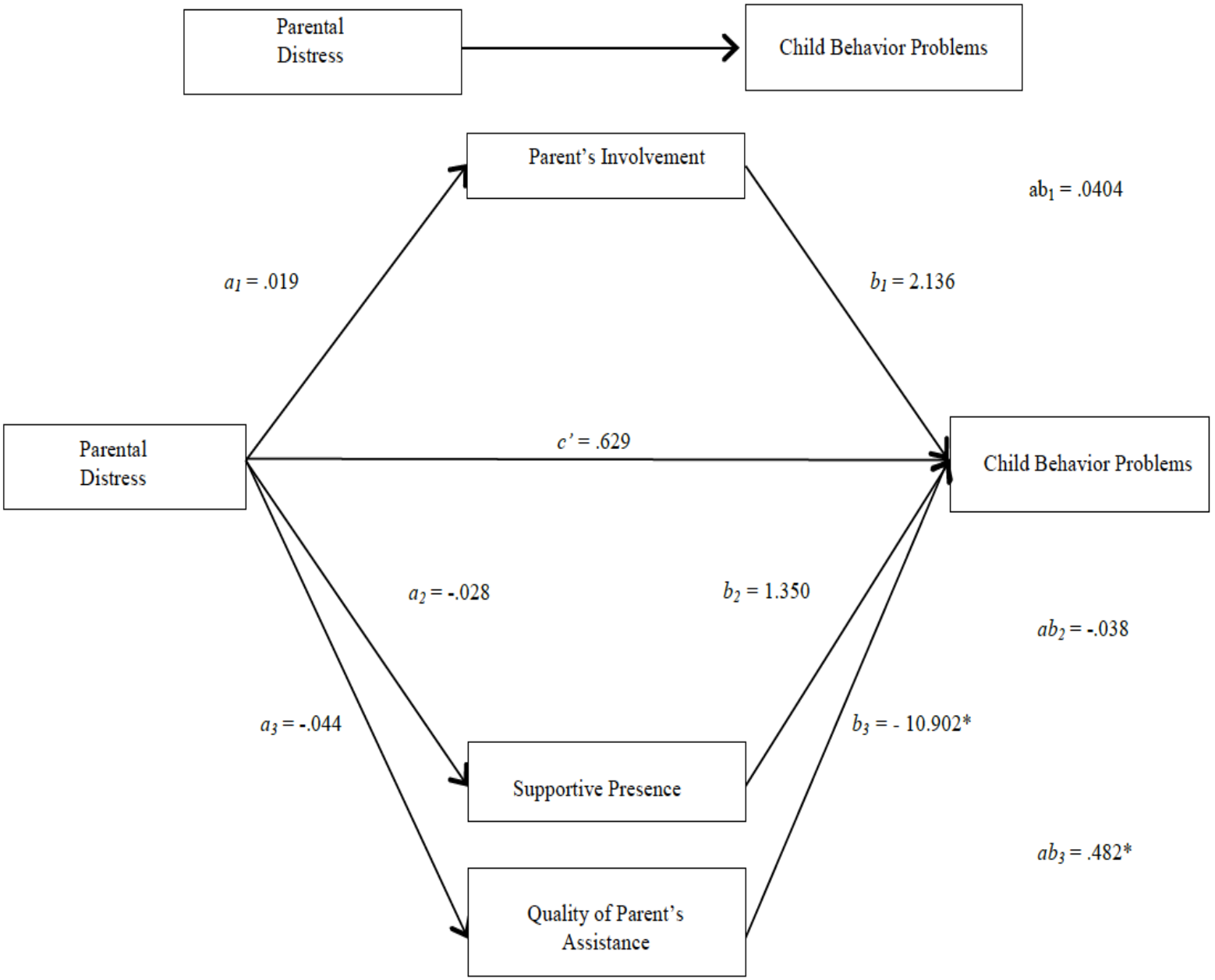
- N=80 children with mixed intellectual and developmental disabilities and their families
  - 61.4% had ASD diagnosis
  - Majority were Latino
  - 46% families <$50k annually
- Randomly assigned to immediate MBSR group (N=39) or waitlist-control group (N=41)
  - Used traditional 8-week MBSR program with 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

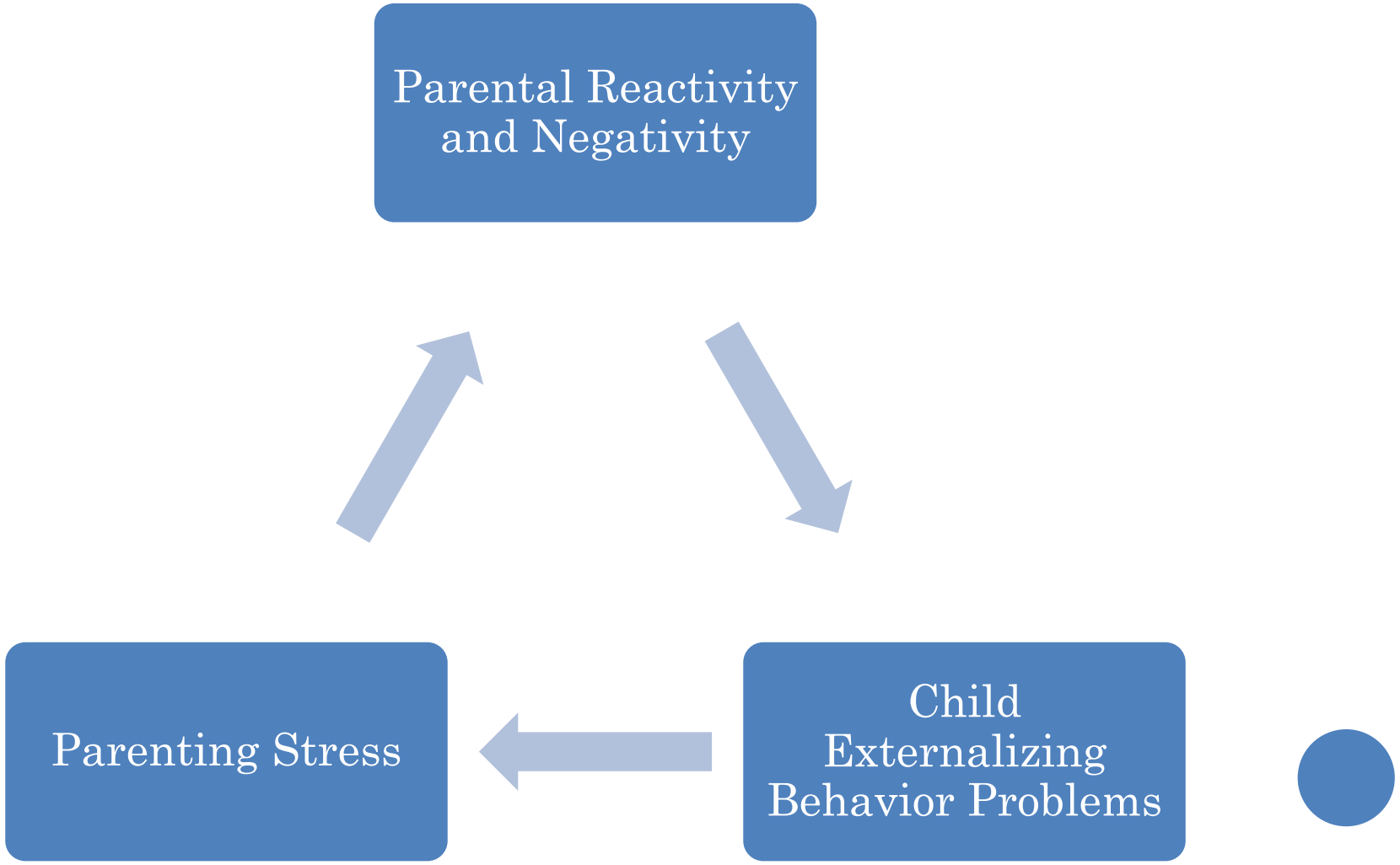


Sanner & Neece, 2017

Next S.T.E.P.S

- 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
Child Externalizing Behavior Problems
Parenting Stress

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 advocacay

PRO-Parenting Study

PRO-Parenting Project

- 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)

	Mode of Delivery		Language	
	In-Person	Virtual	English	Spanish
Cohort 1	X		X	
Cohort 2	X	X		X
Cohort 3	X	X	X	
Cohort 4		X	X	
Cohort 5		X		X
Cohort 6		X	X	

PRO-PARENTING MODEL

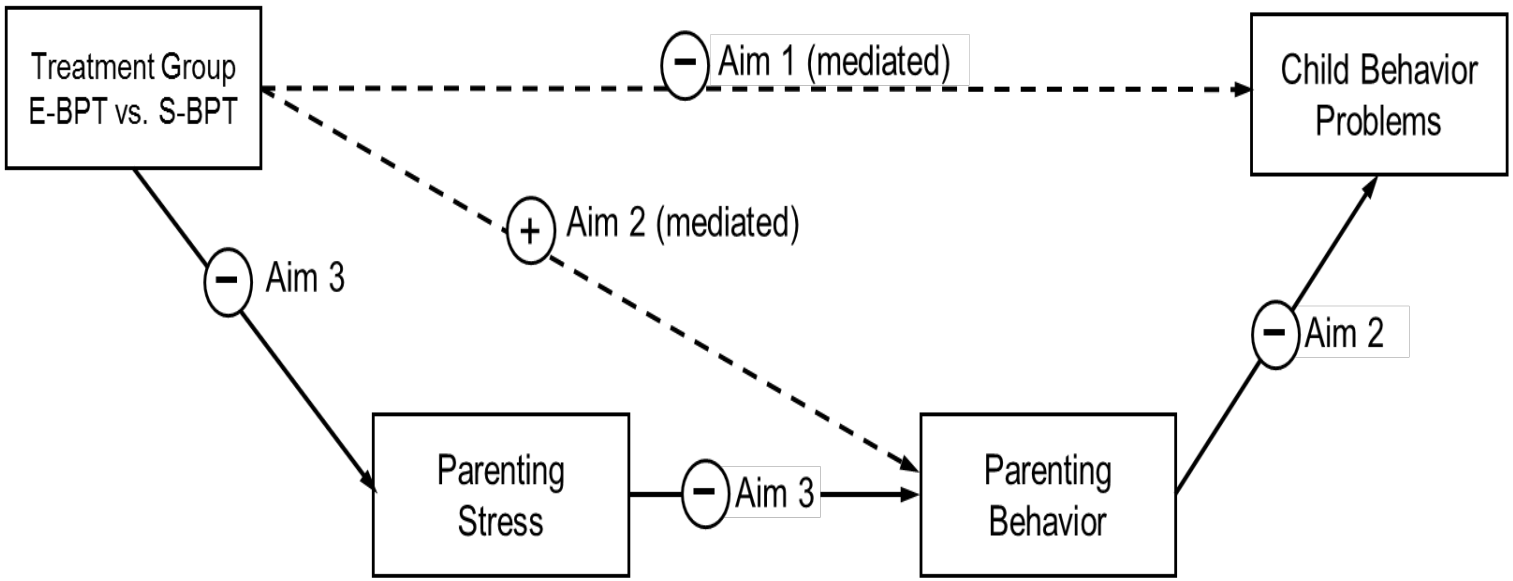


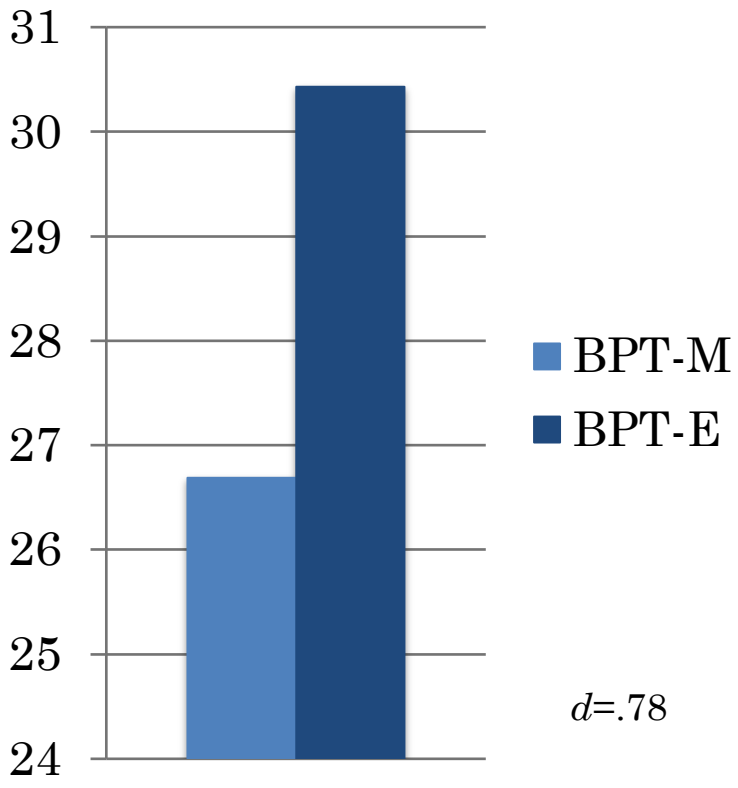
Figure 1. Study Model of relations among treatment, parenting stress, parenting behavior, and child behavior.

PRO-Parenting Method and Pilot

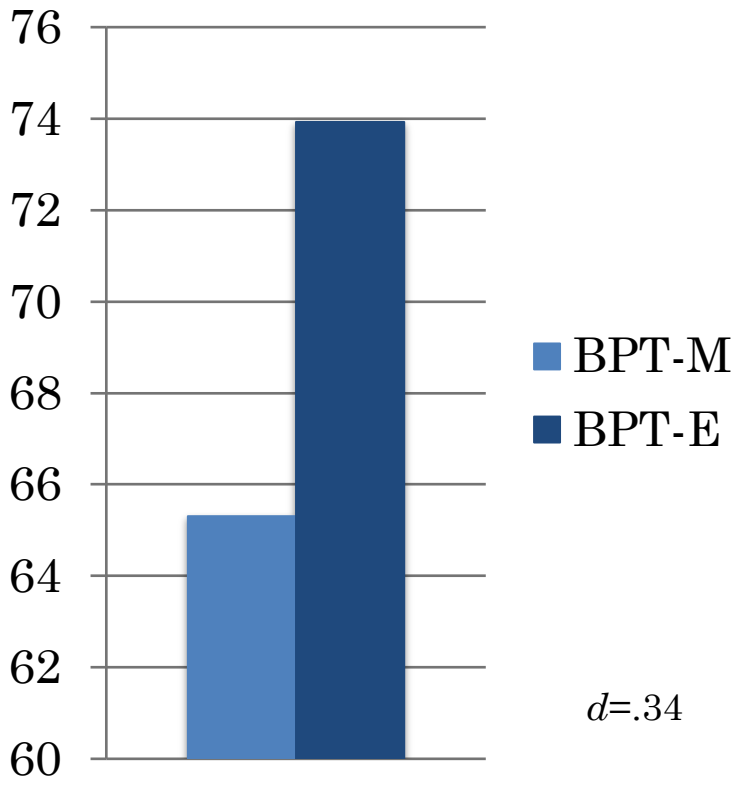
- Parents randomly assigned to:
  - BPT with Mindfulness (BPT-M)
    - 6 weeks of MBSR + 10 weeks of BPT
  - BPT with Psychoeducation (BPT-E)
    - 6 weeks of Psychoeducation + 10 weeks of BPT
- Home visit assessments at baseline, post-treatment, 6 and 12 month follow-up
- Lab visit for diagnostic confirmation 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

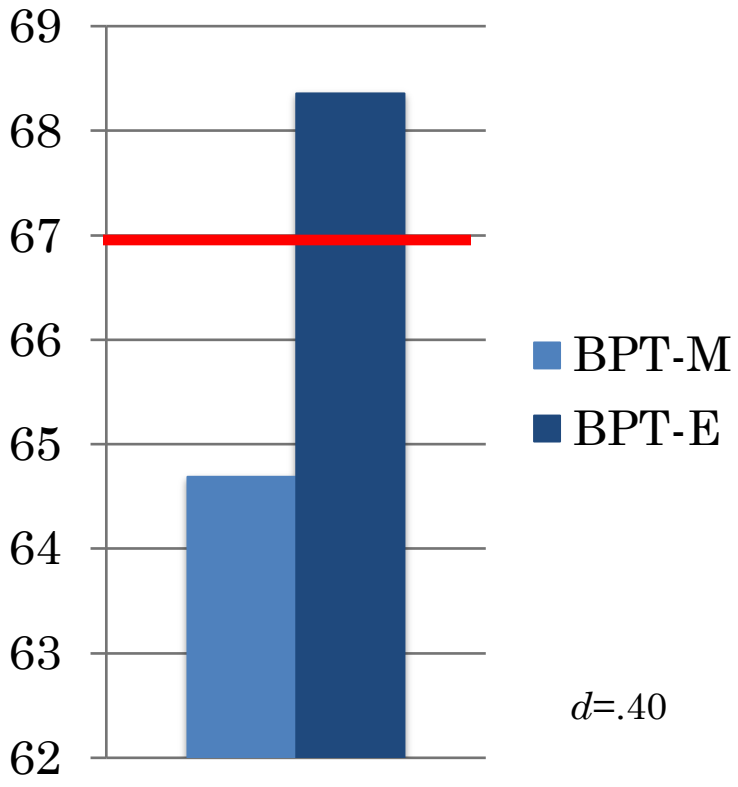


Child Behavior Problems Post-Tx



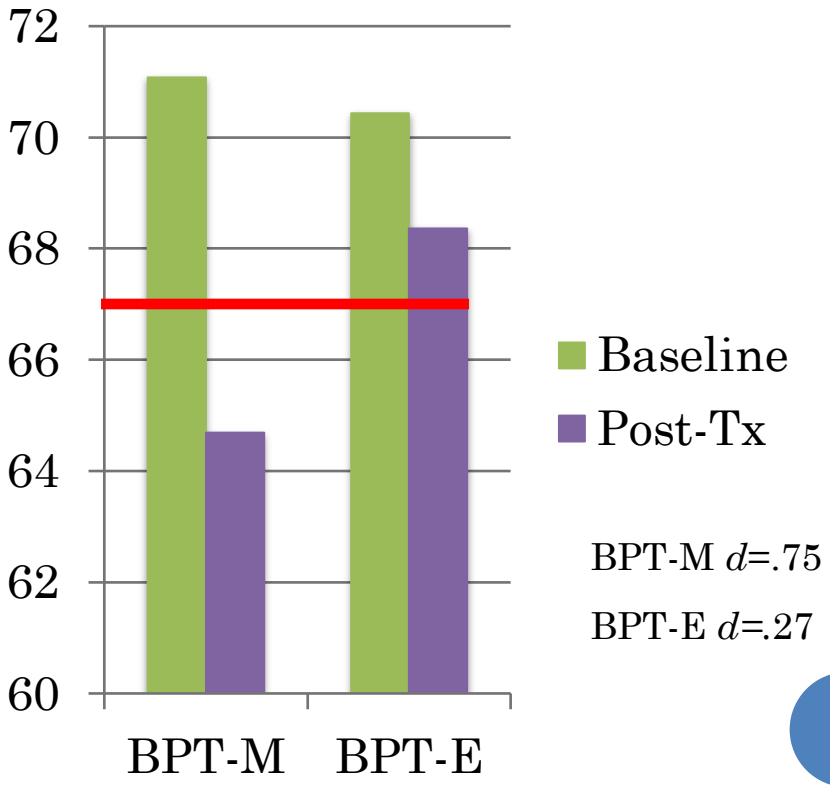
PRO-PARENTING STUDY PILOT STUDY

Child Behavior Problems (Clinical vs. Non-Clinical)



d=.40

Child Behavior Problems (within-group changes)



BPT-M *d*=.75

BPT-E *d*=.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

- Neece, C.L., Chan, N.L., Roberts, L., Klein, K., Fenning, R. (2019). Mindfulness-Based Stress Reduction for Parents Children with Developmental Delays: Understanding the Experiences of Latino Families. *Mindfulness.*

- Sanner, C. M. and Neece, C. L. (2018). Parental distress and child behavior problems: Parenting behaviors as mediators. *Journal of Child and Family Studies, 27*(2), 591-601. doi: 10.1007/s10826-017-0884-4

- Chan, N., & Neece, C.L. (2017). Mindfulness-Based Stress Reduction for Parents of Children with Developmental Delays: A Follow-Up Study. *Evidence-Based Practice in Child & Adolescent Mental Health*, 3:1, 16-29, DOI: 10.1080/23794925.2017.1399484.

- Neece, C. L. (2014). Mindfulness-Based Stress Reduction for Parents of Young Children with Developmental Delays: Implications for Parental Mental Health and Child Behavior Problems. *Journal of Applied Research in Intellectual Disabilities*, *27*(2), 174-186.

- Neece, C.L., Green, S., Baker, B.L. (2012). Relationship between parenting stress and child behavior problems: An examination across time. *Journal of Intellectual and Developmental Disabilities*, 117(1), 48-66.

- Baker, B.L., Neece, C.L., Fenning, R.M., Crnic, K., & Blacher, J. (2010). Mental disorders in five year old children with or without intellectual disability: Focus on ADHD. *Journal of Clinical Child and Adolescent Psychology*, *39*(4), 492-505.

- Neece, C.L. & Baker, B.L. (2008). Predicting maternal parenting stress in middle childhood: The roles of child intellectual status, behavior problems, and social skills. *Journal of Intellectual Disability Research, 52(12),* 1114-1128.

- Baker, B. L., Blacher, J., Crnic, K. A., & Edelbrock, C. (2002). Behavior problems and parenting stress in families of three-year-old children with and without developmental delays. *American journal on mental retardation*, *107*(6), 433-444.

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

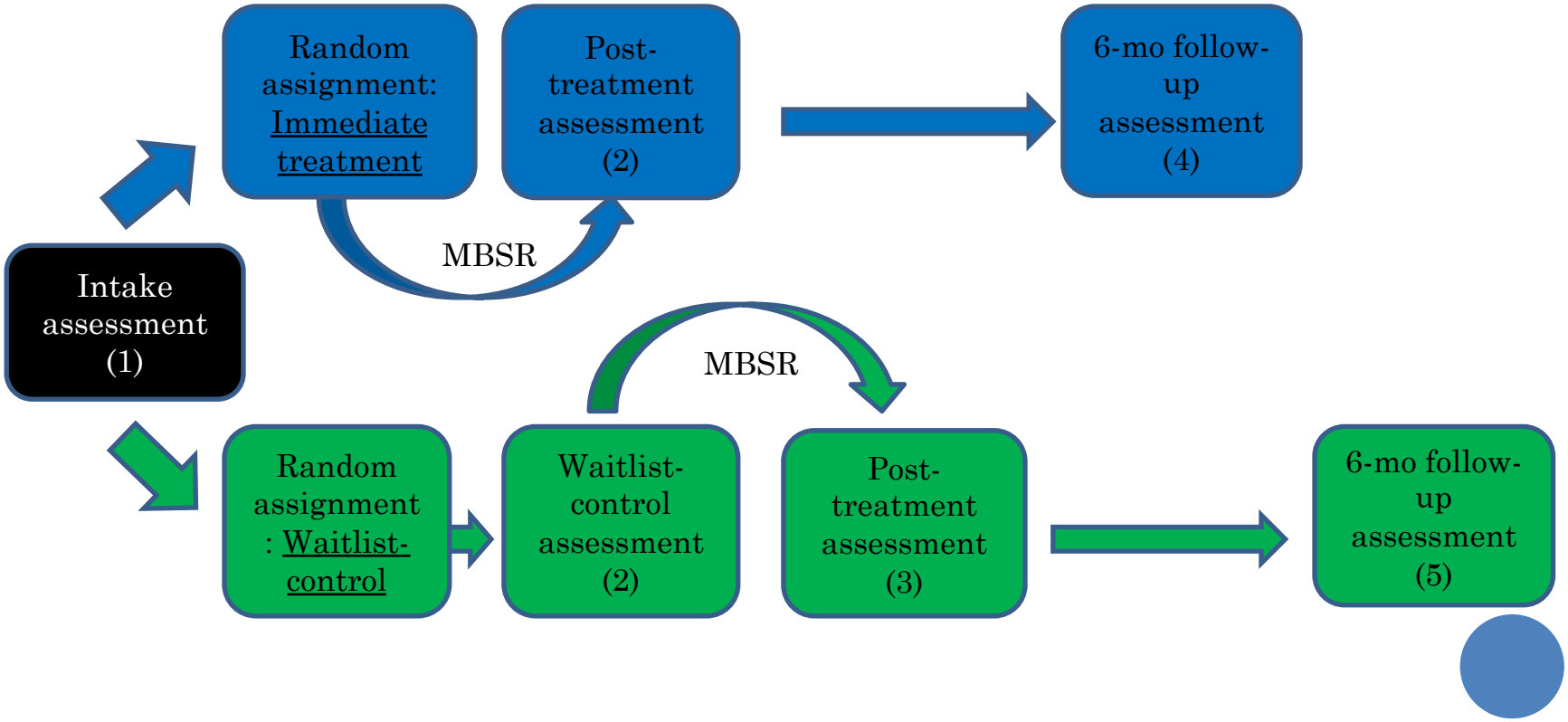
- Primary recruitment was through the Inland Empire Regional Center, Southern California.
- Notifications in the university newsletter
- Article in the primary local newspaper (Riverside county)

Inland Regional Center's Headquarters in San Bernardino

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 ☑

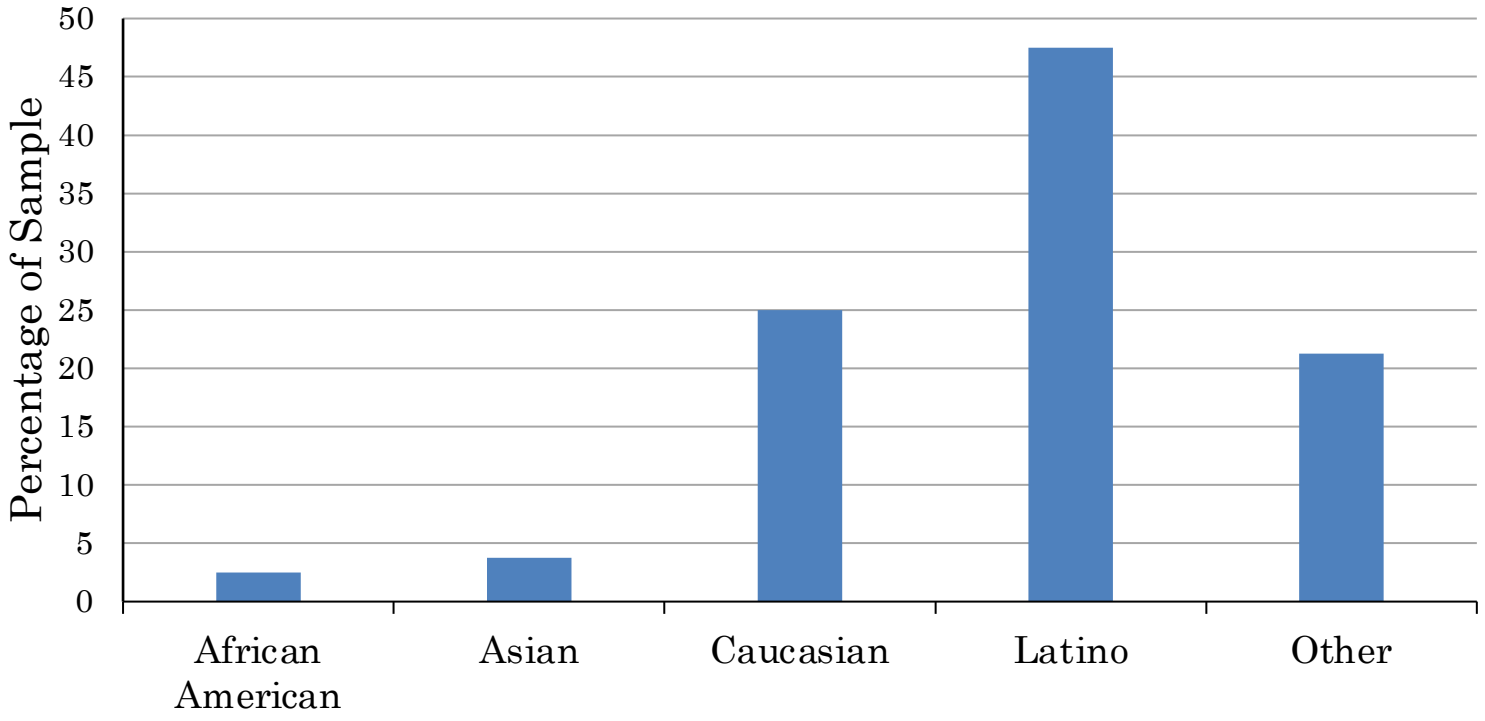
Procedures


Random assignment: Immediate treatment
Post-treatment assessment (2)
6-mo follow-up assessment (4)
MBSR
Intake assessment (1)
MBSR
Random assignment : Waitlist-control
Waitlist-control assessment (2)
Post-treatment assessment (3)
6-mo follow-up assessment (5)

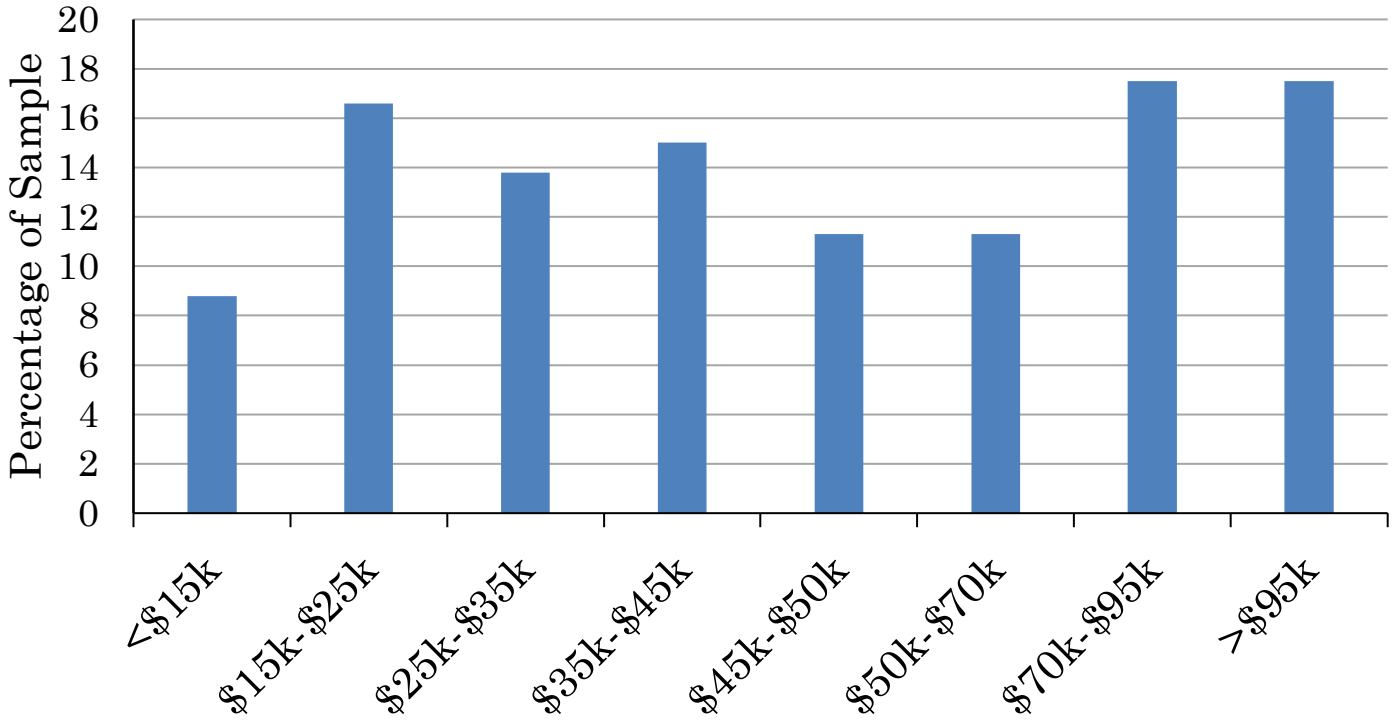
Demographic Characteristics of Participants by Treatment Group

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

Ethnicity Breakdown



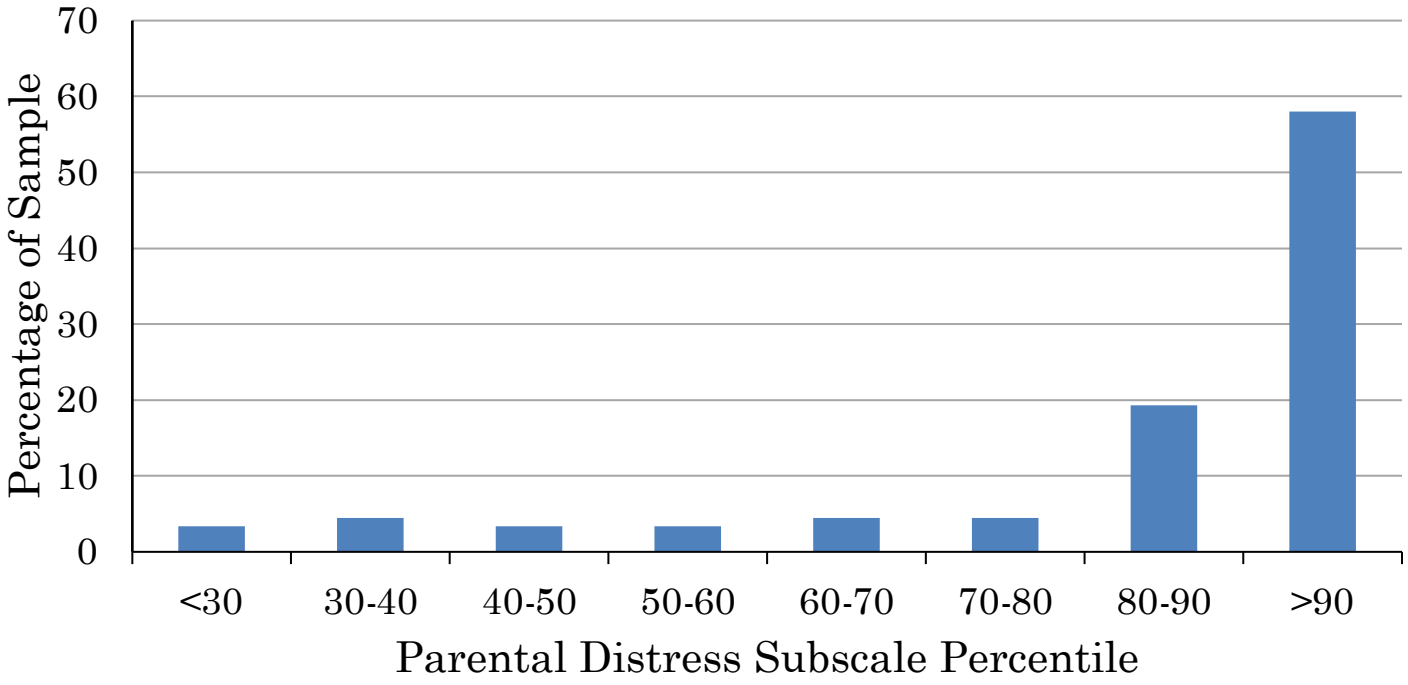
Income Breakdown



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



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

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

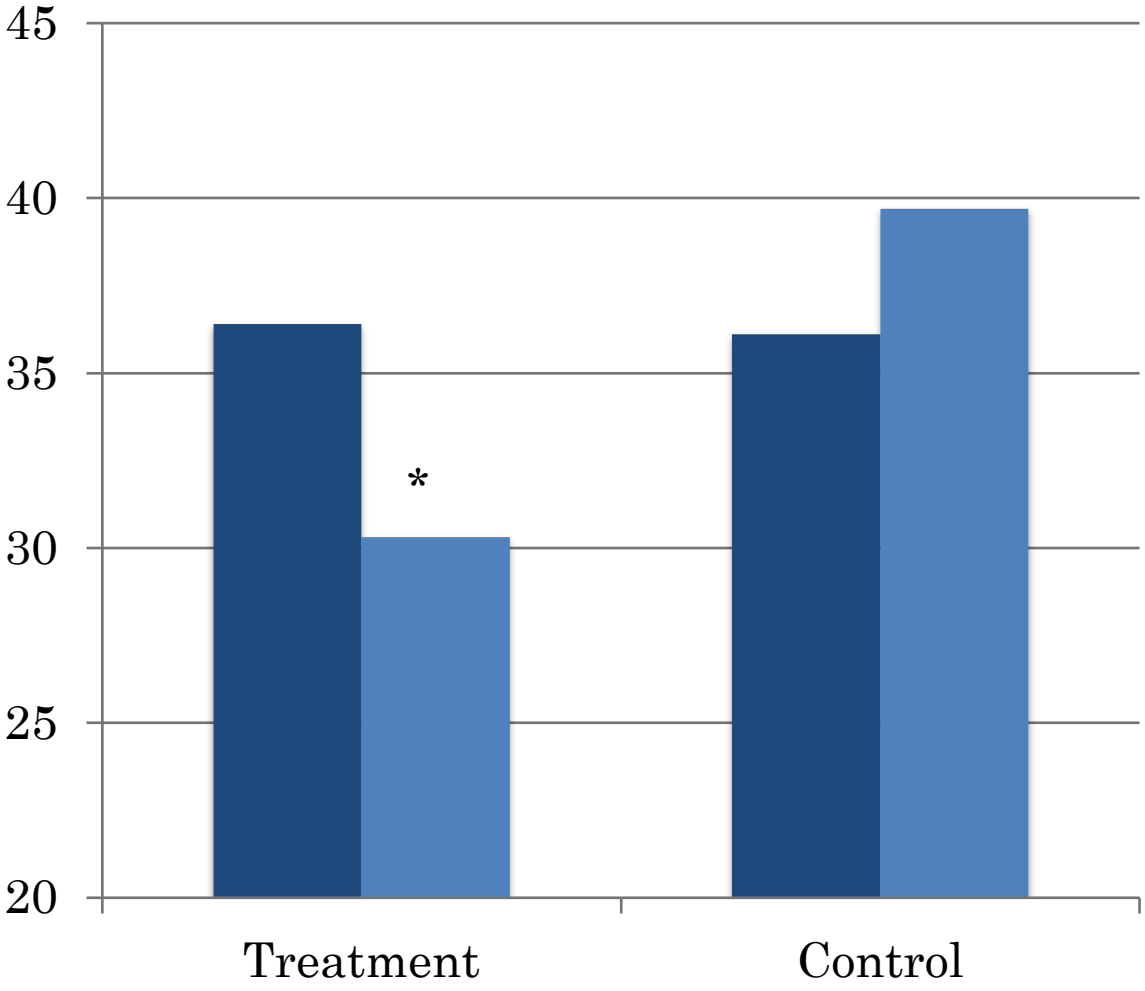
Results: Parental Mental Health

Results of 2x2 Mixed Design MANOVA for Parental Mental Health

	Multivariate *F*	Wilks's Lambda	*p*-value	Partial η^2
TxGrp	5.93	.74	<.002	.26
Time	2.24	.88	>.095	.12
TxGrp X Time	5.91	.74	<.002	.26

Chan & Neece, 2017

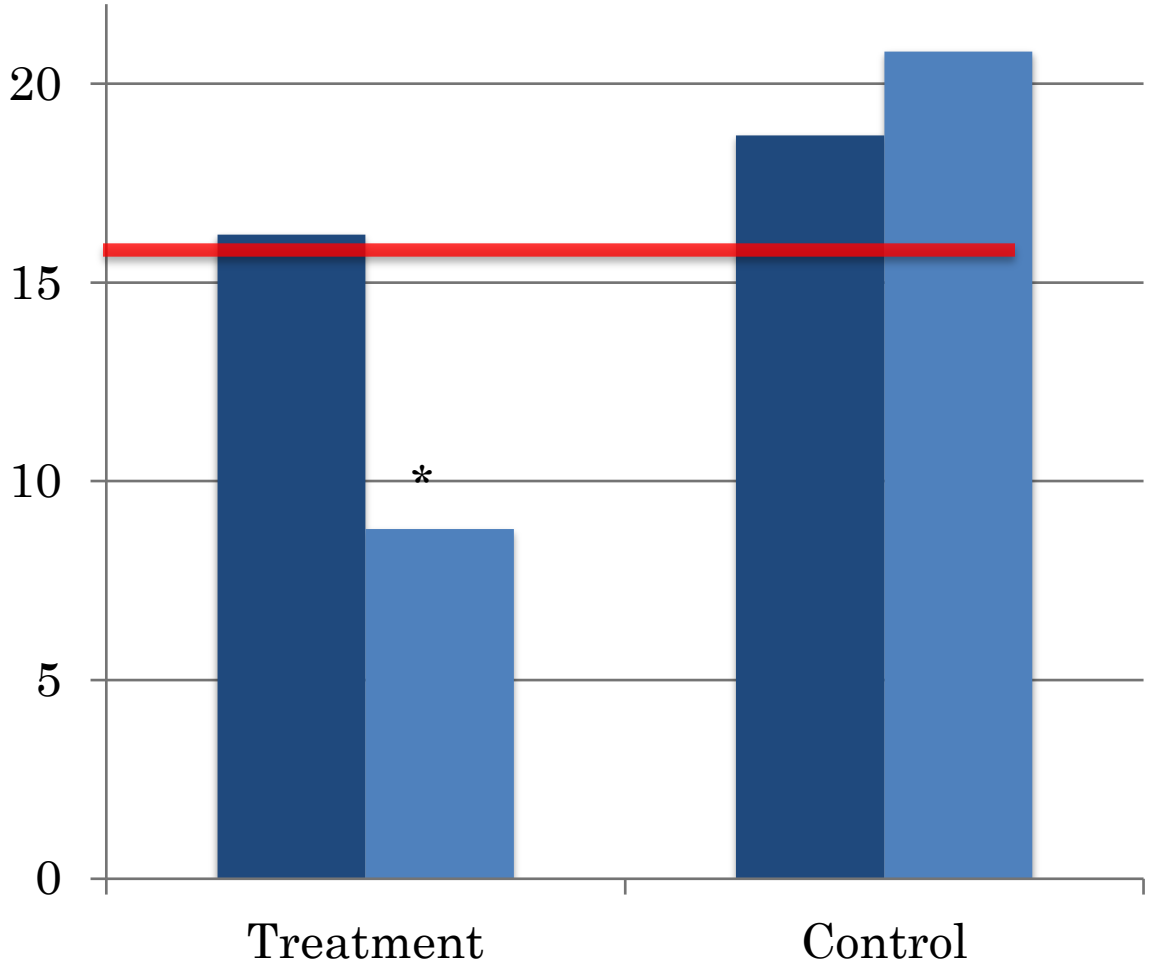
Parental Stress



***F* (1, 61) = 11.18**
***p* < .001**
Partial η^2 = .16

Chan & Neece, 2017

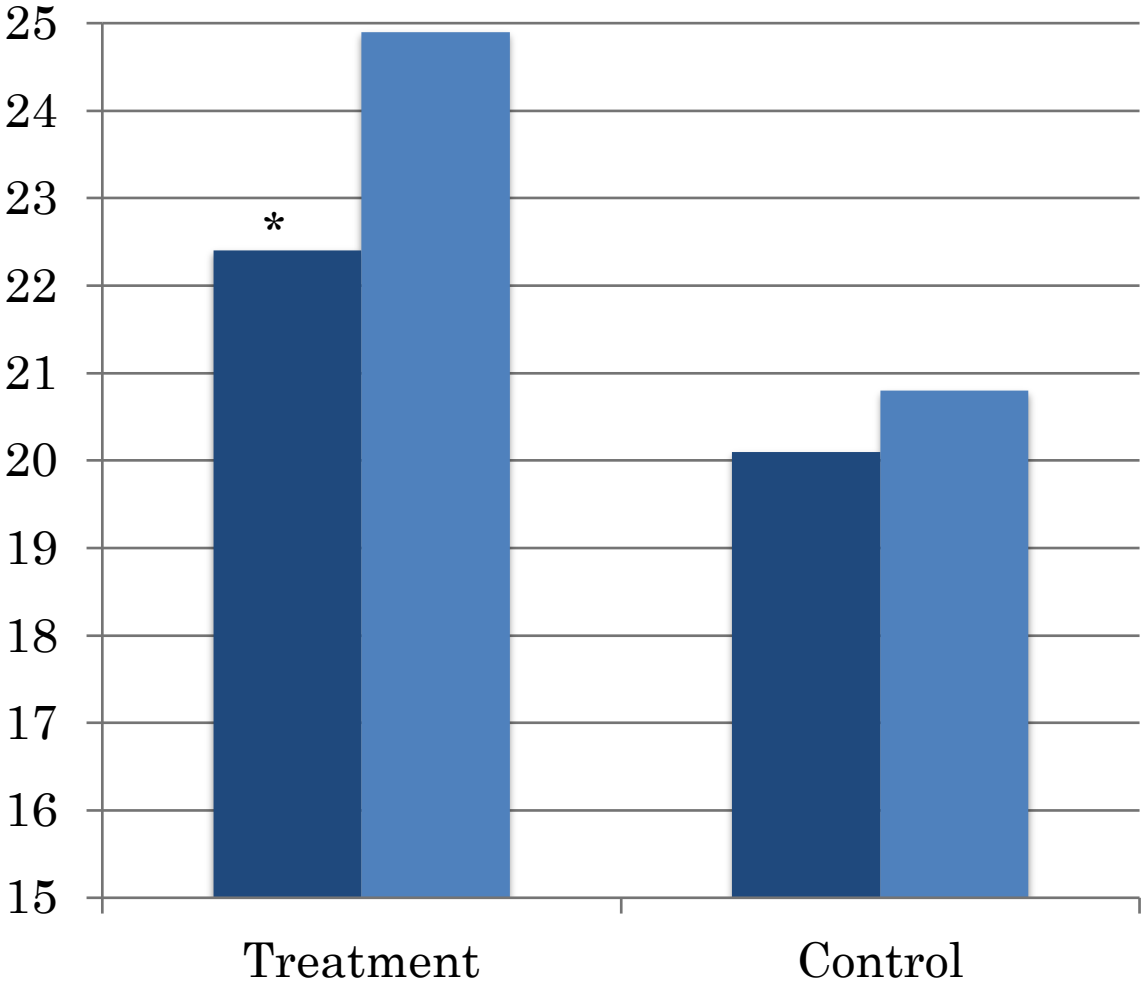
Parental Depression



F (1, 53) = 18.91
p < .001
Partial η^2 = .26

Chan & Neece, 2017

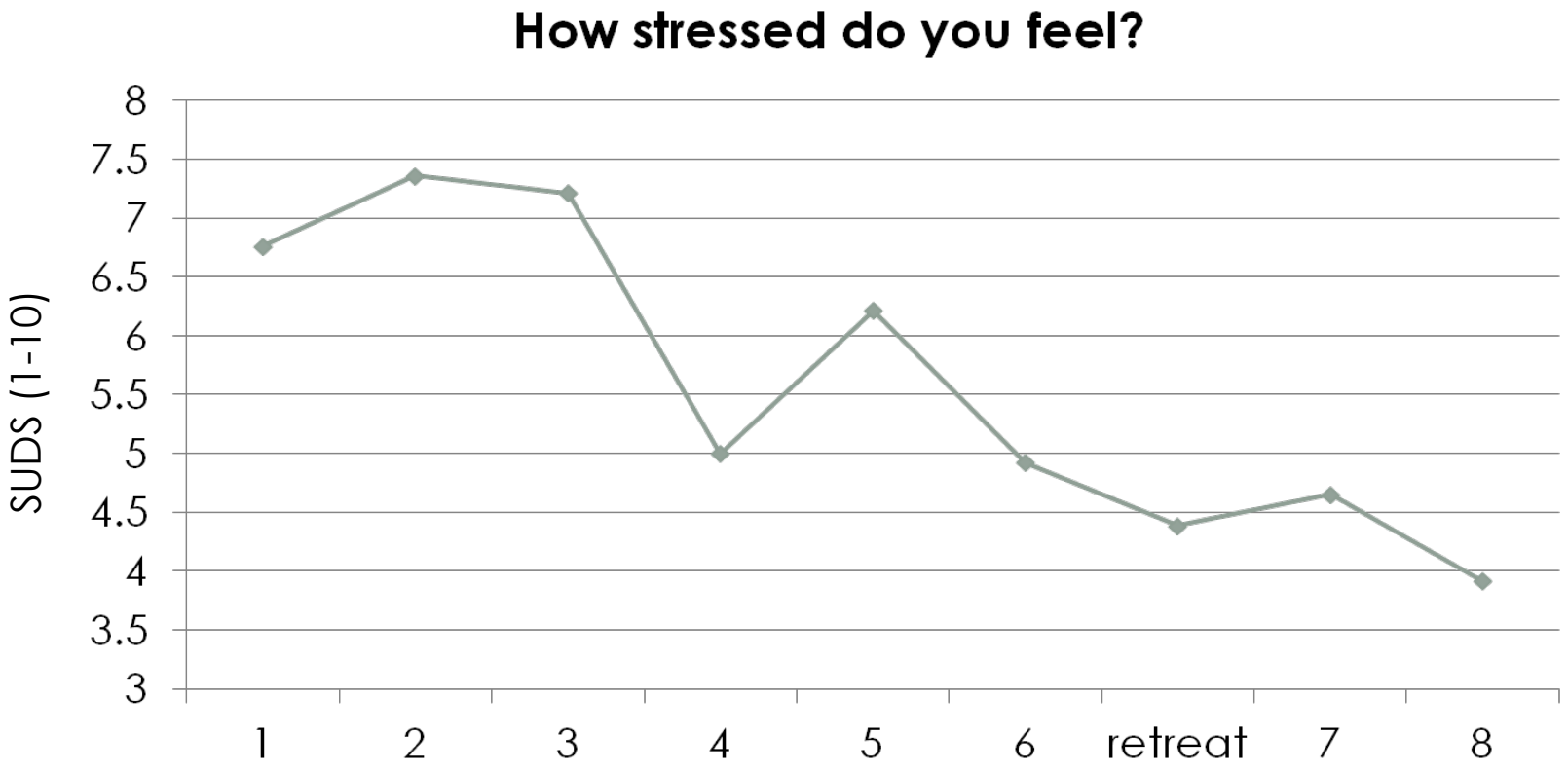
Satisfaction with Life



***F* (1, 51) = 5.33**
***p* < .05**
Partial η^2 = .10

Chan & Neece, 2017

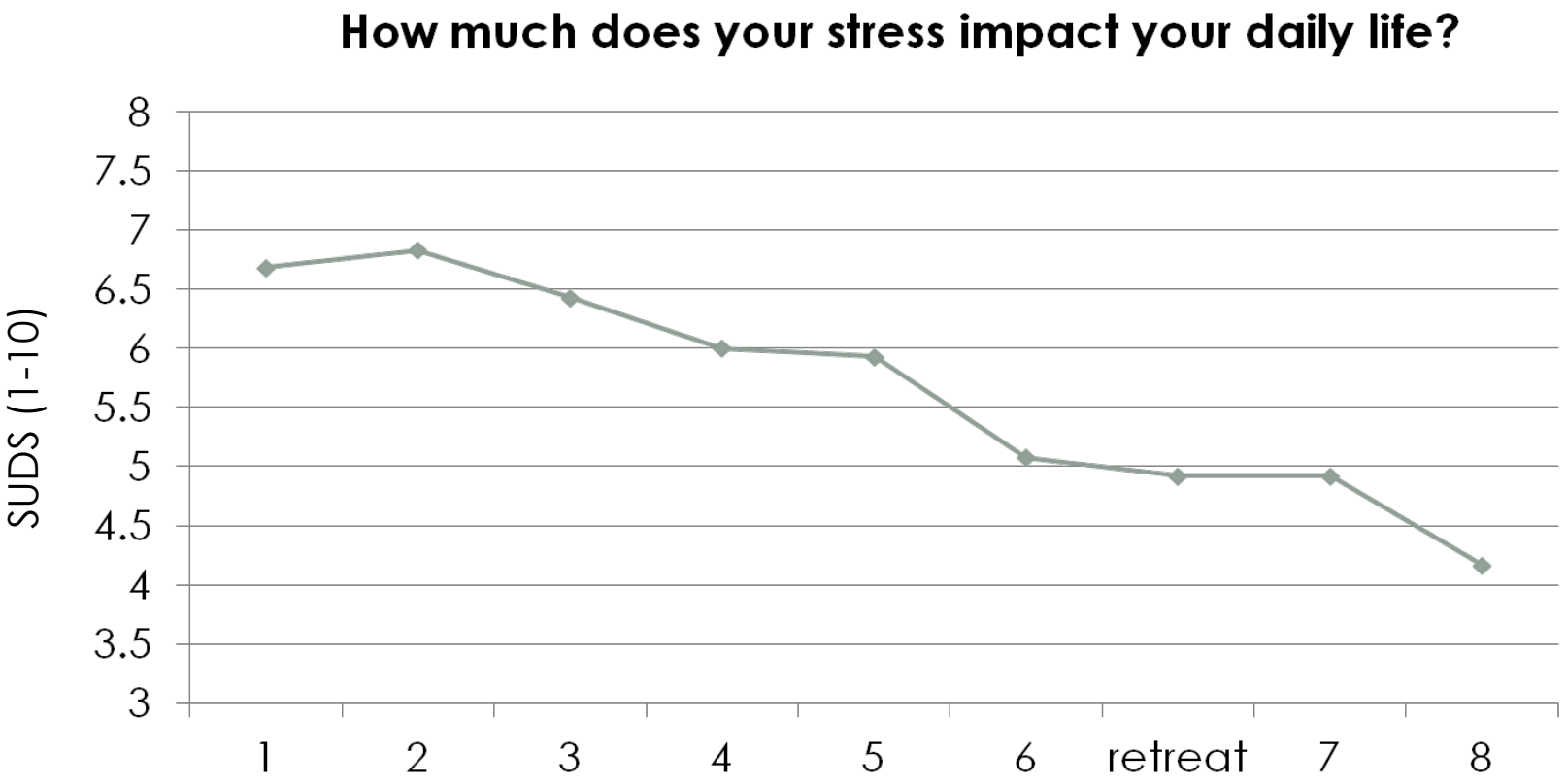
Changes Across Intervention



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

Neece, 2014

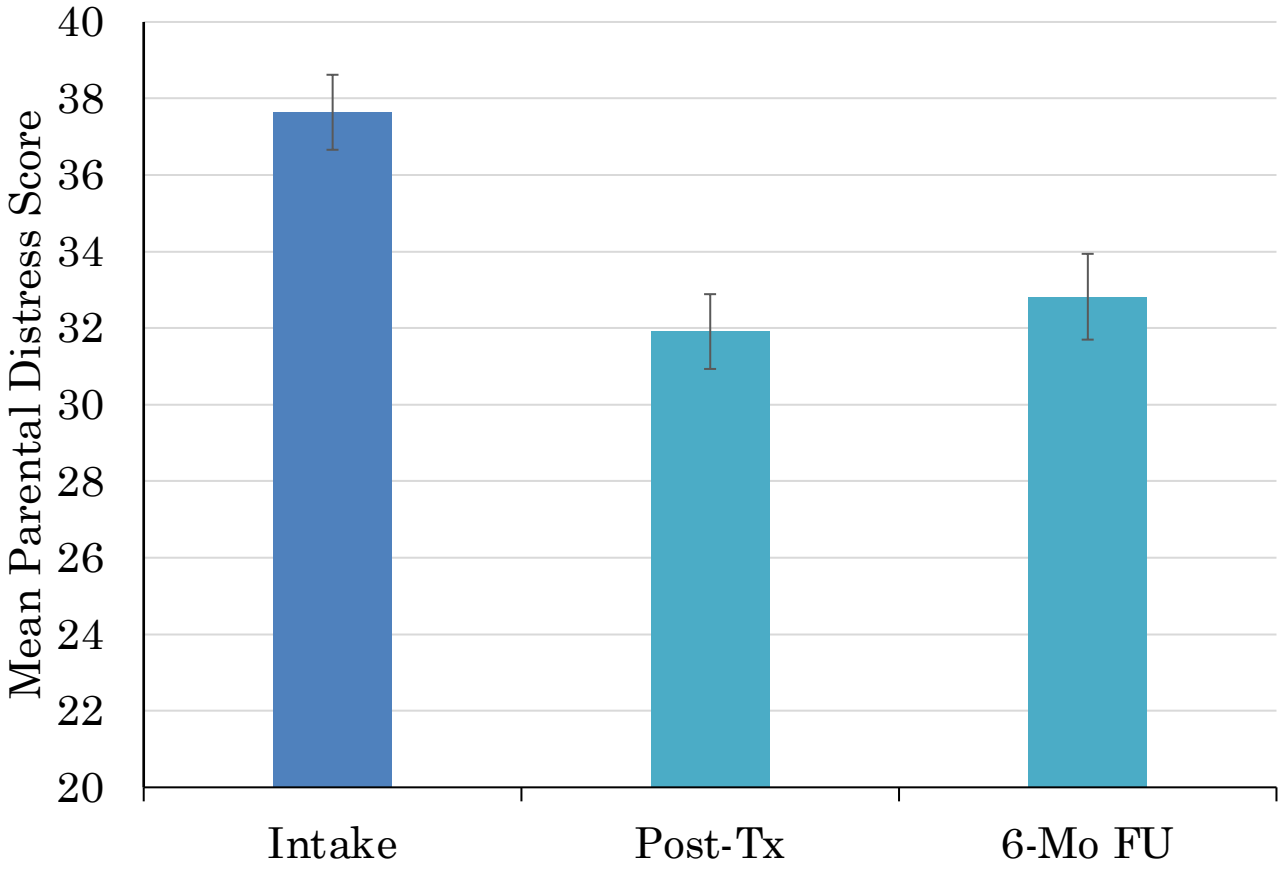
Changes Across Intervention



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

Neece, 2014

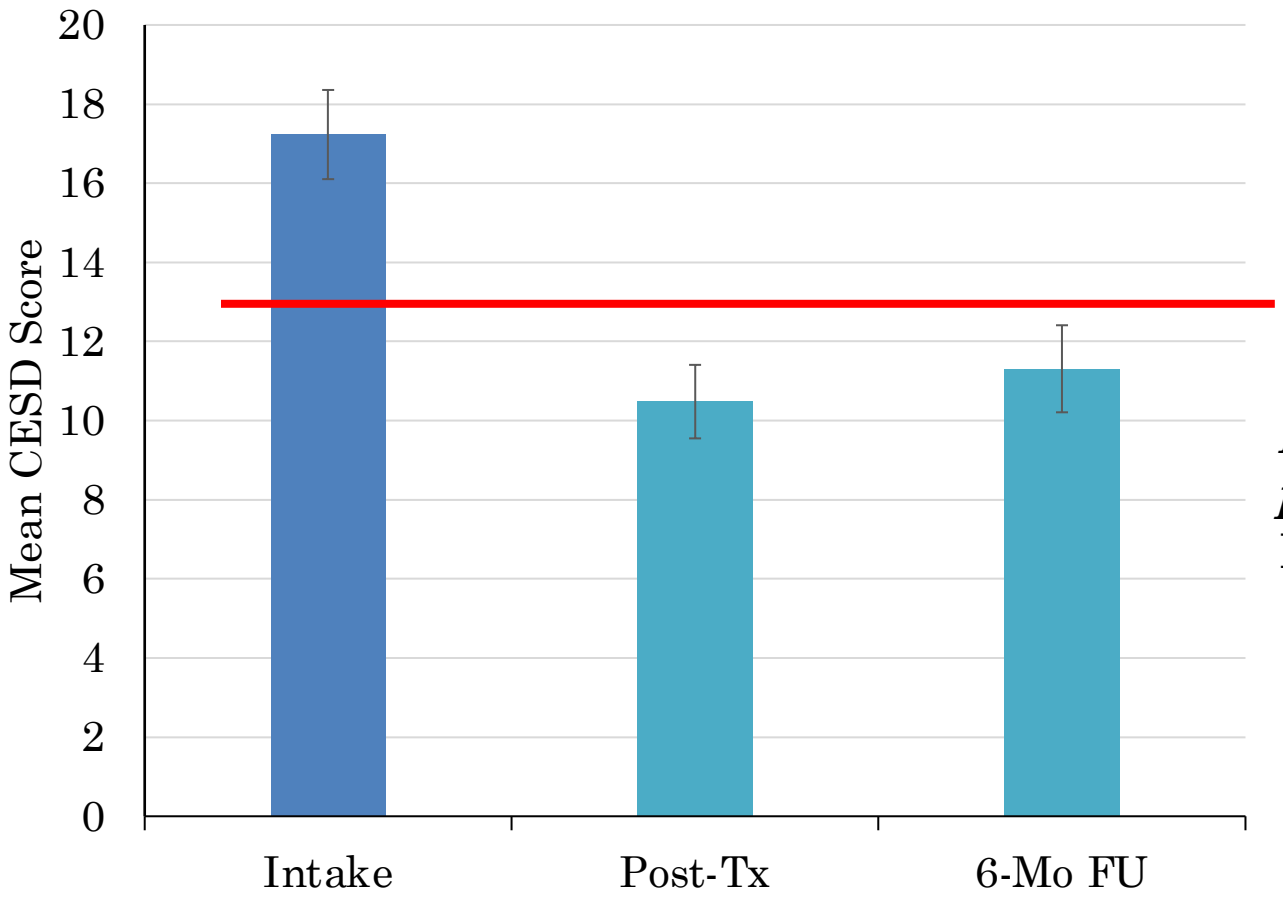
Results: Parenting Stress Follow-Up



F (2, 86) = 8.61
p < .001
Partial η^2 = .17

Chan & Neece, 2017

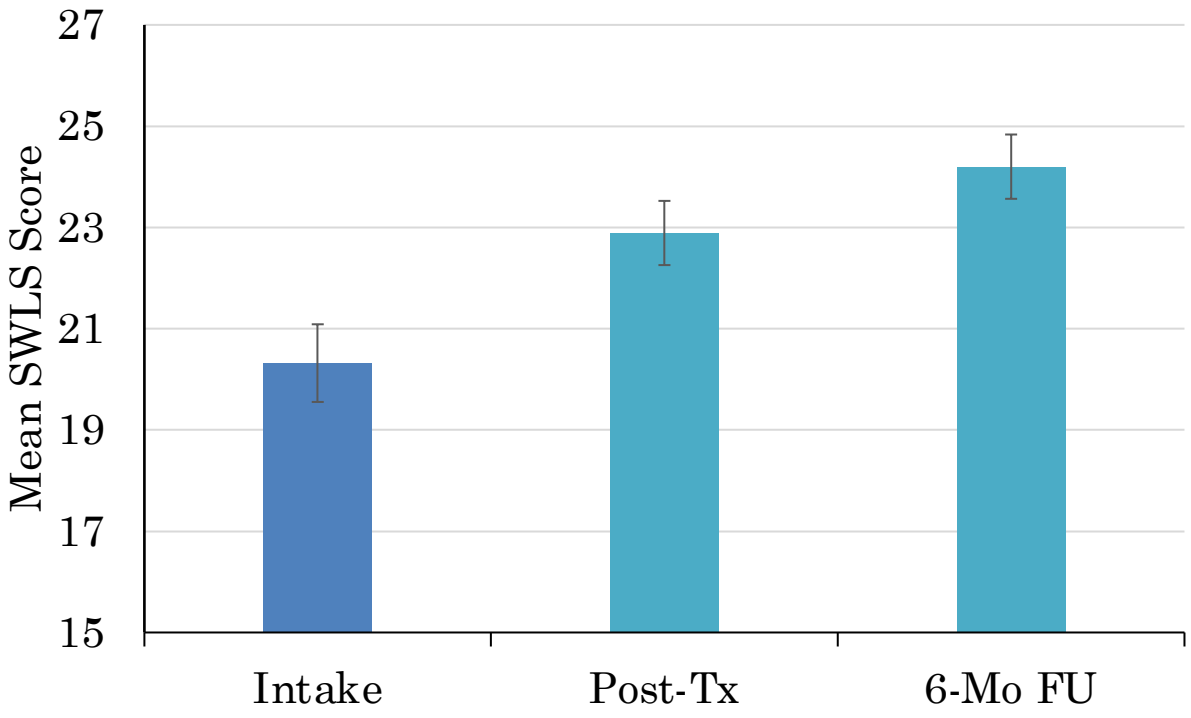
Results: Parental Depression Follow-Up



F (2, 86) = 16.56
p < .001
Partial η^2 = .28

Chan & Neece, 2017

Results: Satisfaction with Life Follow-Up



***F* (2, 86) = 11.50**
***p* < .001**
Partial η^2 = .21

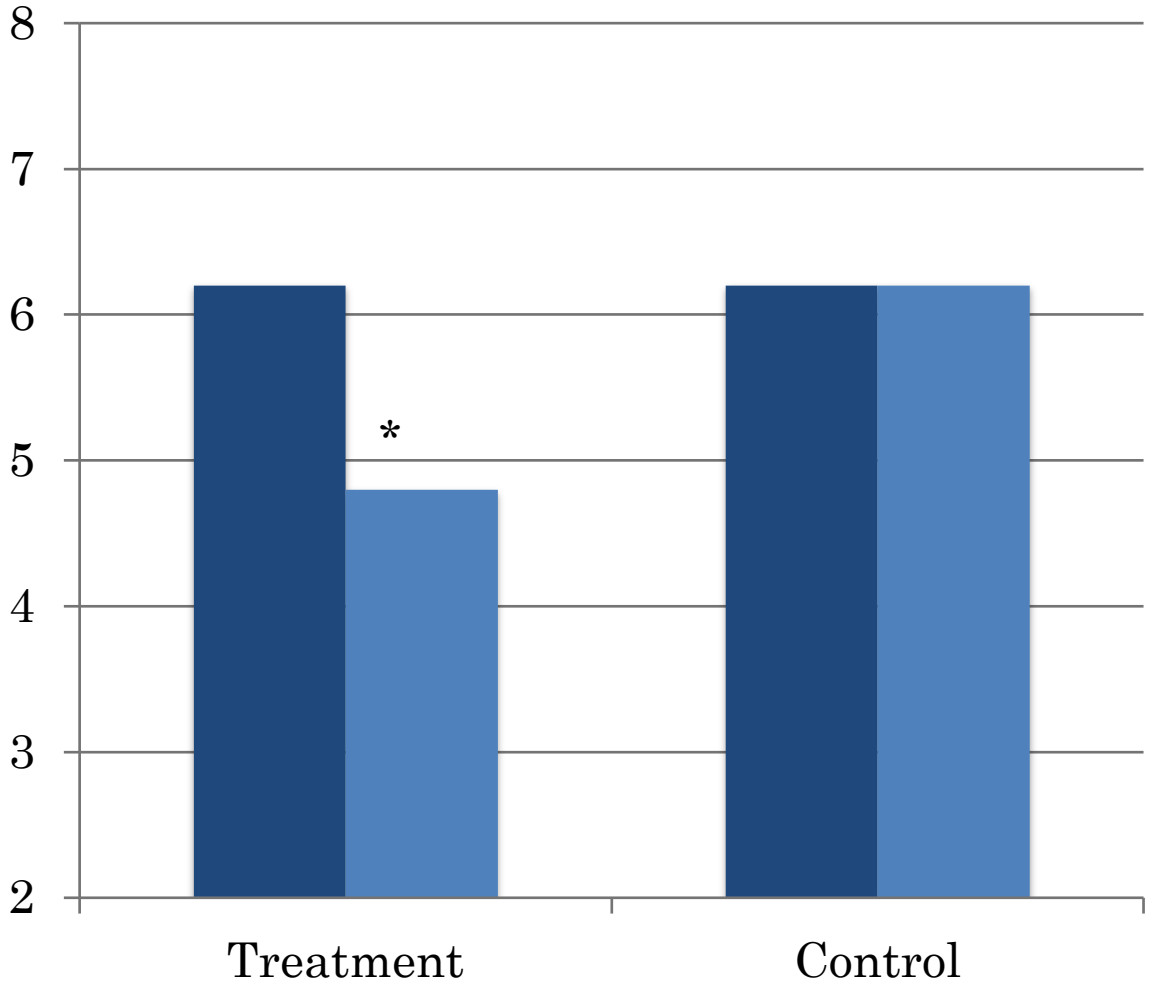
Chan & Neece, 2017

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



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

Chan & Neece, 2017

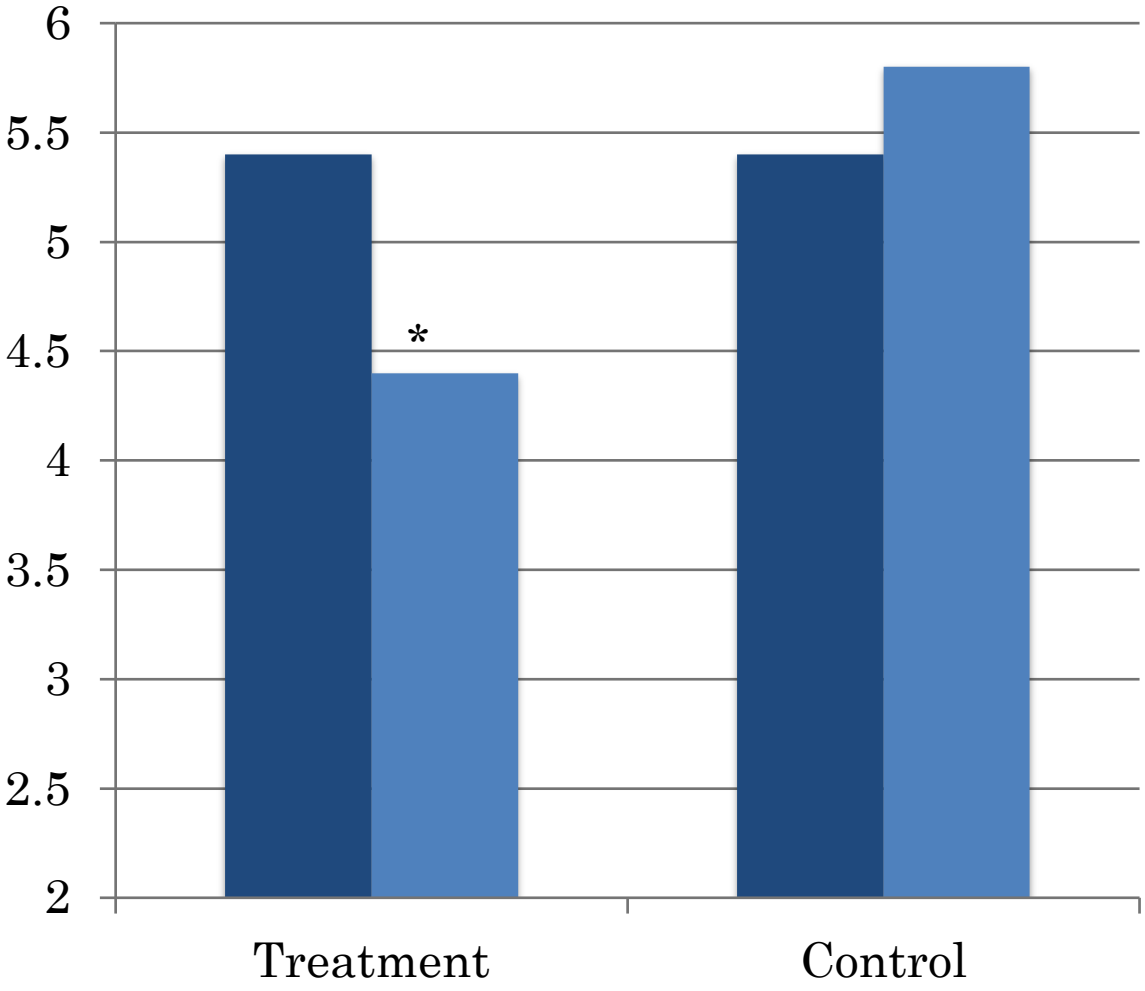
Results: Child Externalizing Behaviors

Results of 2x2 Mixed Design MANCOVA for Child Externalizing Behaviors

	Multivariate *F*	Wilks's Lambda	*p*-value	Partial η^2
Behavioral Services	6.24	.84	<.003	.16
TxGrp	2.41	.93	>.098	.07
Time	2.38	.93	>.100	.07
Bx X Time	0.10	.99	>.905	.00
TxGrp X Time	7.90	.80	<.001	.20

Chan & Neece, 2017

Attention Problems



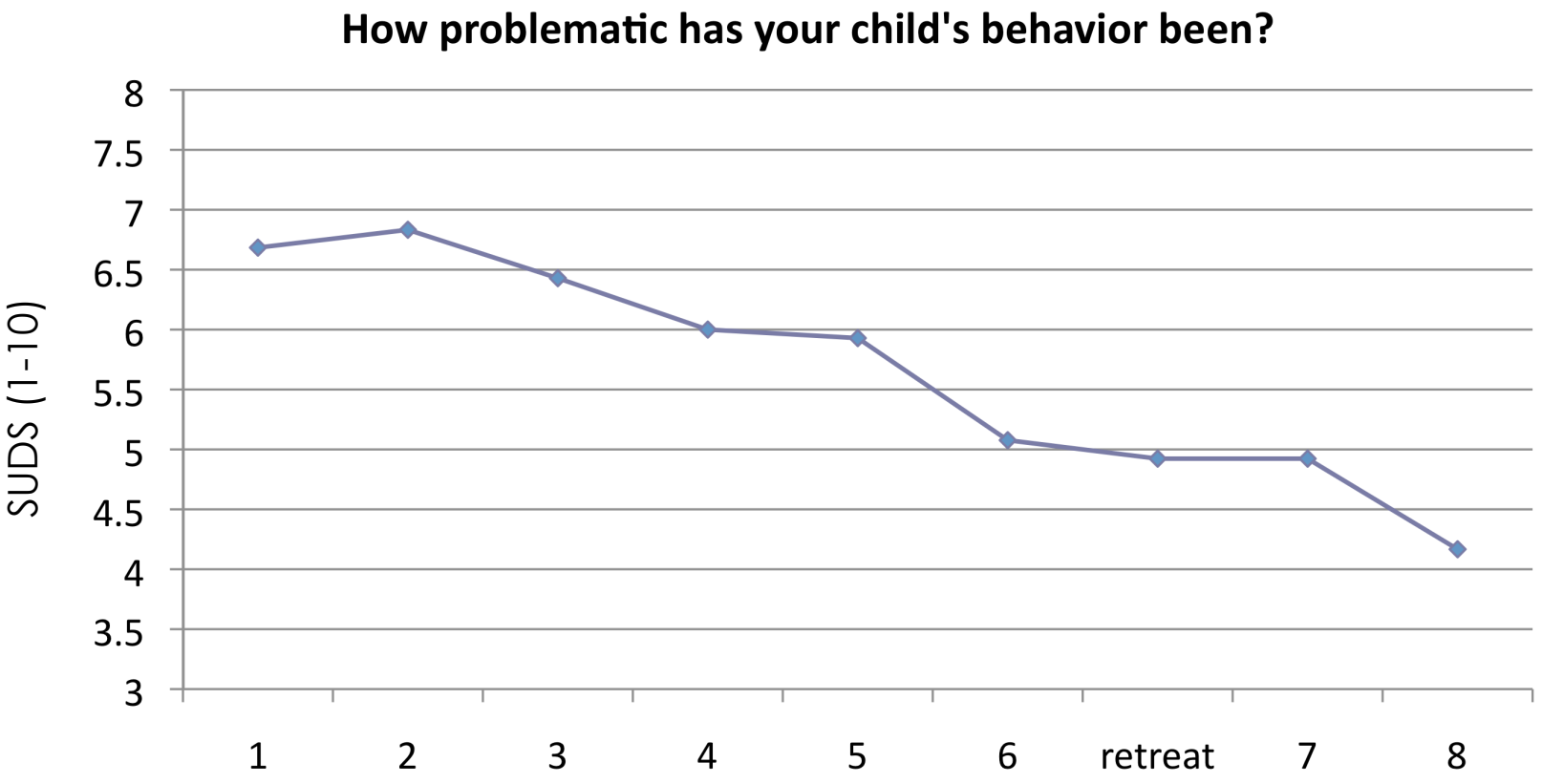
***F* (1, 65) = 10.67**
***p* < .01**
Partial η^2 = .14

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

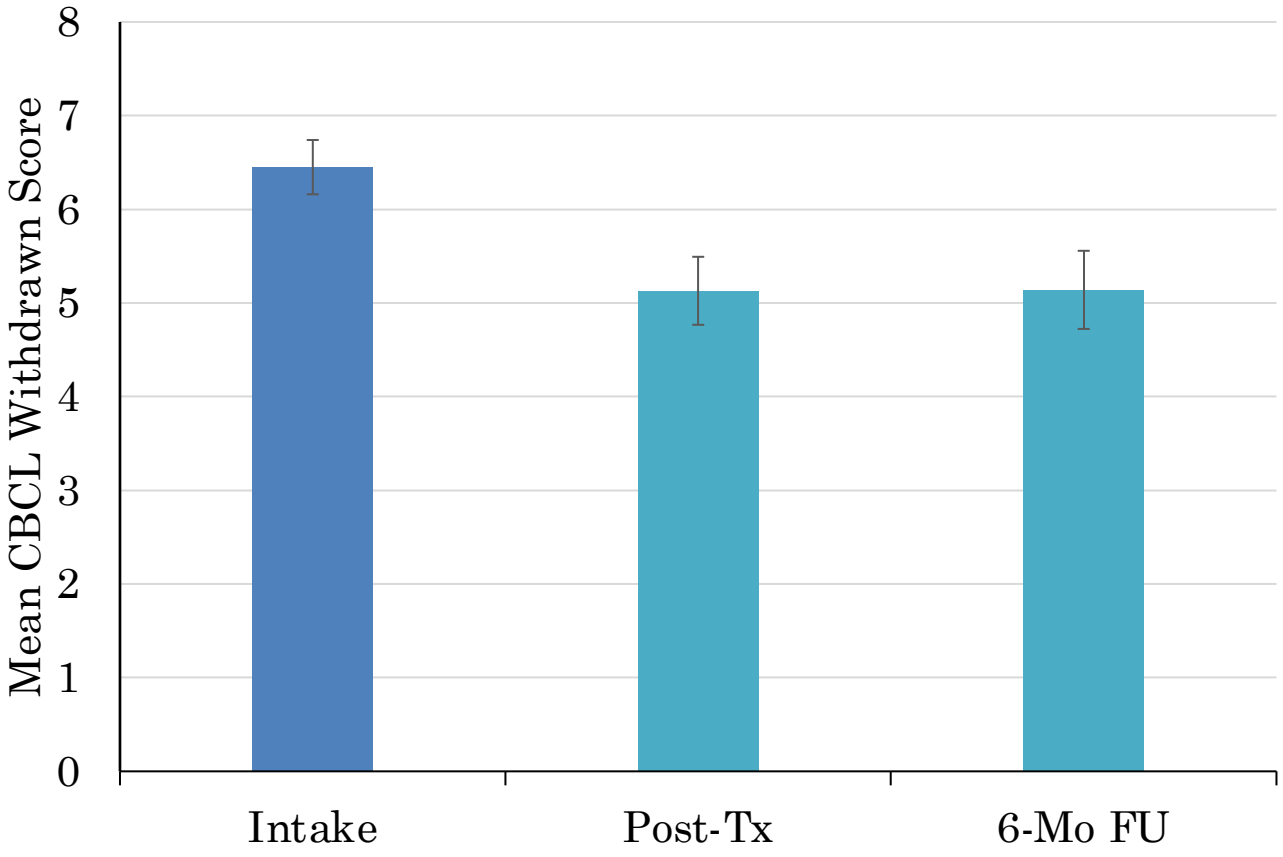
Changes Across the Intervention



Intercept (B_{00})=5.31***; Slope (B_{10})= -0.10***

Neece, 2014

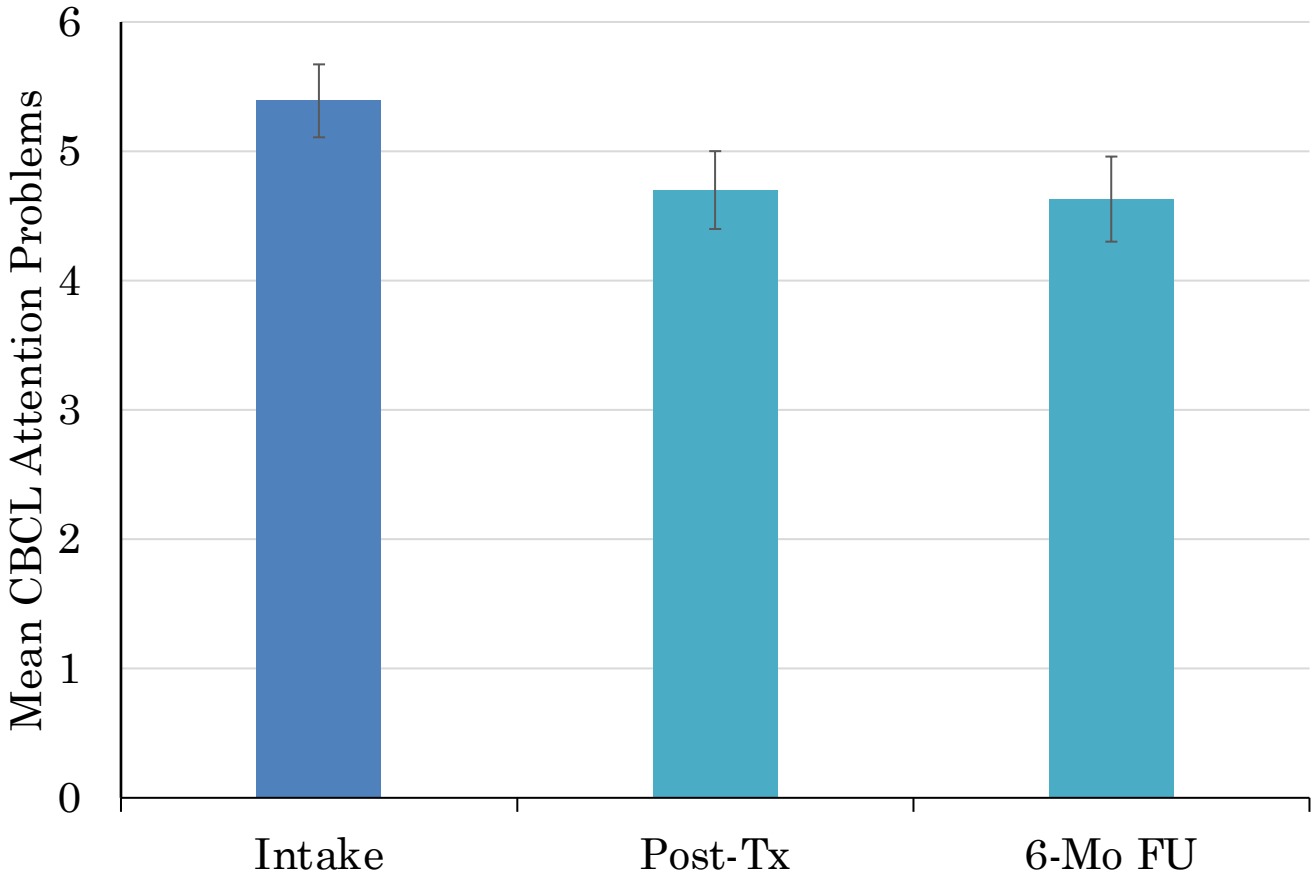
Withdrawn Behavior Follow-Up



F (2, 108) = 8.12
p < .001
Partial η^2 = .13

Chan & Neece, 2017

Attention Problems Follow-Up



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

Chan & Neece, 2017