

grow your kids



Talk

Read

Engage

Encourage

MARYLAND AMERICAN
ACADEMY OF PEDIATRICS
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TREE STUDY RESULTS

TREE PROGRAM:

Promoting Positive Parent Child Interactions in Low Income Families with Children Ages 0-2 Years by Pediatric Providers During Well Child Visits

**Maryland Chapter AAP and University of Maryland School of Social Work
Institute for Innovation and Implementation**

WHAT IS THE TREE PROGRAM?

Promotes positive interactions between parents and young children

Developmental coaching integrated into well child visits for children 0-2 years

Targets low- income families

Performed by the pediatric provider

TREE materials are available on the Maryland AAP website



BASIC TREE CONCEPTS



TALK: Bathe your baby in language descriptively and in all settings



READ: Read together regularly and enthusiastically



ENGAGE: Have *fun* together / Make your baby feel safe and loved



ENCOURAGE: Be your baby's cheerleader

TREE PROGRAM

Why this program?

Enhances pediatric practitioner role to provide developmental *coaching* in addition to surveillance and screening

Program is a universal tier one public health intervention to support early *relational health* as advocated by the AAP 2021 Toxic Stress Policy statement

Promotes *health equity* for children living in poverty at risk for developmental delay

Augments statewide force of Early Intervention services



TREE PROGRAM



What *fun* things do you enjoy doing with your child?

Developmental Narrative

(where does your child fit in? where are they heading?)

Provide TREE tips

Can you try it out?

What *fun* things can you do with your child as they *change* in the next few months?

Provide parent with *positive feedback*

TREE STUDY: METHODS

Quasi-experimental design
in 2 pediatric training
programs in Baltimore City
(residents: intervention n=24,
control n=42)

A convenience sample
($n = 167$ families) was
recruited (79 intervention; 88
control)

Follow-up data was
obtained from 45% of
families due to COVID-19
(38 intervention; 38 control)

TREE STUDY: MEASURES

Parent STIMQ₂

- Baseline at ages 4-6 months
- Post at ages 9-15 months after 2-3 well child visits with TREE
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Pediatric Residents

- TREE Questionnaire at baseline and after 10 months of implementation

TREE STUDY: DEMOGRAPHICS

Child age:

3-10 months old at baseline and
9-15 months at follow up

Child race:

Predominantly Black
(76% intervention; 77% control)

Medicaid:

(81% intervention; 78% control)

Caregiver marital status:

Single
(52% intervention; 53% control)

Caregiver Age:

21-30 yrs
(48% intervention/ 58% control)
31-40 yrs
(30% intervention; 19% control)

Caregiver Education:

High School
(42% intervention; 44% control)
College
(29% intervention; 26% control)

Caregiver Employment:

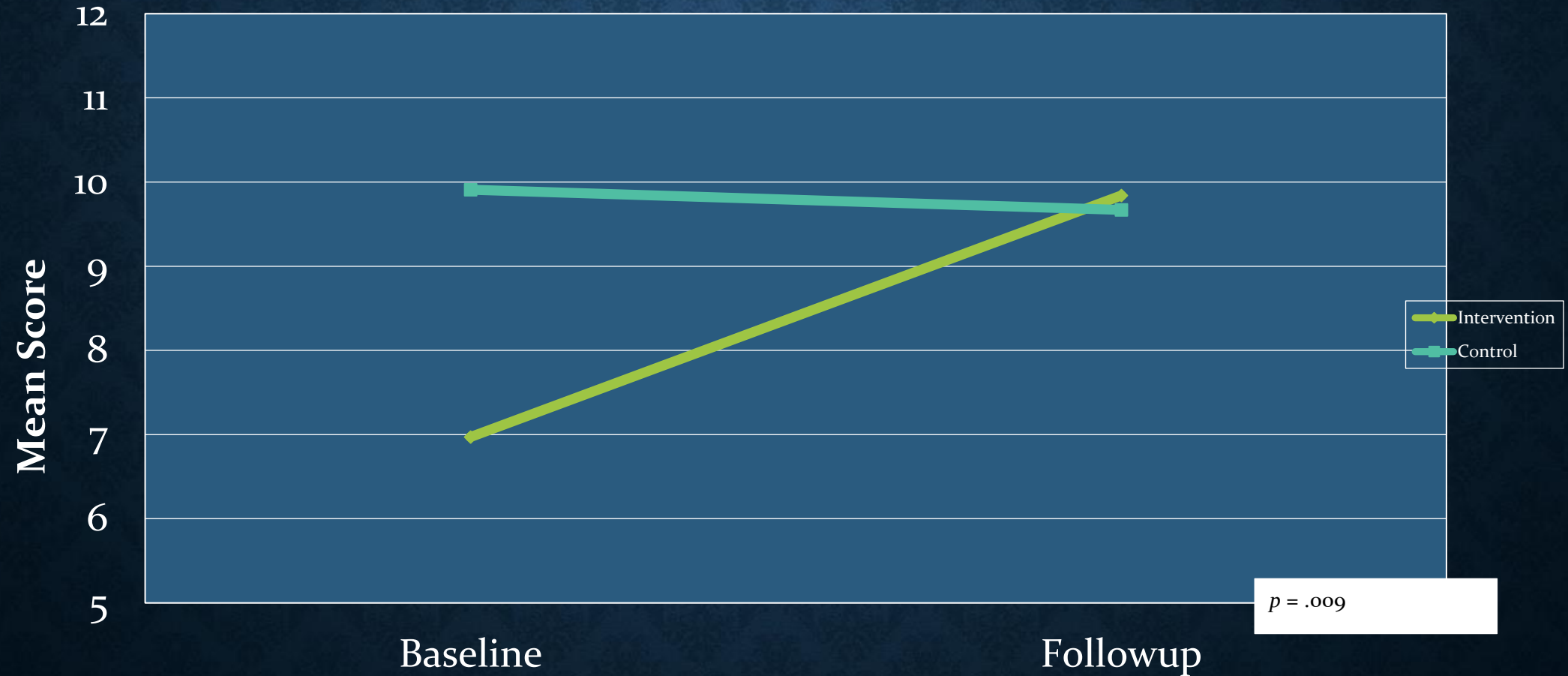
Full time
(29% intervention; 43% control)
Unemployed
(46% intervention; 38% control)

TREE STUDY: CAREGIVER RESULTS

Significant differences noted *between* the intervention vs control group measured at follow up using independent samples t tests in:

Parent Verbal Responsivity
($t = 2.71$; $d = .68$; 95% CI, .17 to 1.18;
 $p = .009$)

PVR BETWEEN INTERVENTION AND CONTROL GROUPS (AT FOLLOW UP)



TREE STUDY: CAREGIVER RESULTS

Significant changes noted *within* the intervention vs control group measured at baseline and follow up using paired samples t tests in:

Parent Verbal
Responsivity (PVR)
($t = -3.02$; $d = -.54$; 95% CI, -.92 to -.16; $p = .005$)

PVR Everyday
Routines
($t = -3.28$; $d = -.53$; 95% CI, -.87 to -.19; $p = .002$)

PVR Play and Pretend
($t = -3.34$; $d = -.54$; 95% CI, -.88 to -.20; $p = .002$)

TREE STUDY: CAREGIVER RESULTS

PVR Results Interpretation

TREE program most closely aligns with the items measured on the PVR and Reading subscales

TREE program helps to close parental knowledge and performance gaps and boosts confidence

Pandemic effect?: cumulative effects in intervention group of TREE program **plus** increased time at home to implement

TREE STUDY: CAREGIVER RESULTS

Trending changes noted *within* the intervention vs control group measured at baseline and follow up using paired samples t tests in:

Bookreading Quality

($t = -1.85$; $d = -.34$; 95% CI, $-.7$ to $.03$;
 $p = .07$)

Reading Quality Results Interpretation:



Both groups received ROR program at their health centers – but steeper change in the intervention group may reflect additive effect of TREE program

TREE STUDY: CAREGIVER RESULTS

TREE STUDY RESULTS: PEDIATRIC RESIDENTS

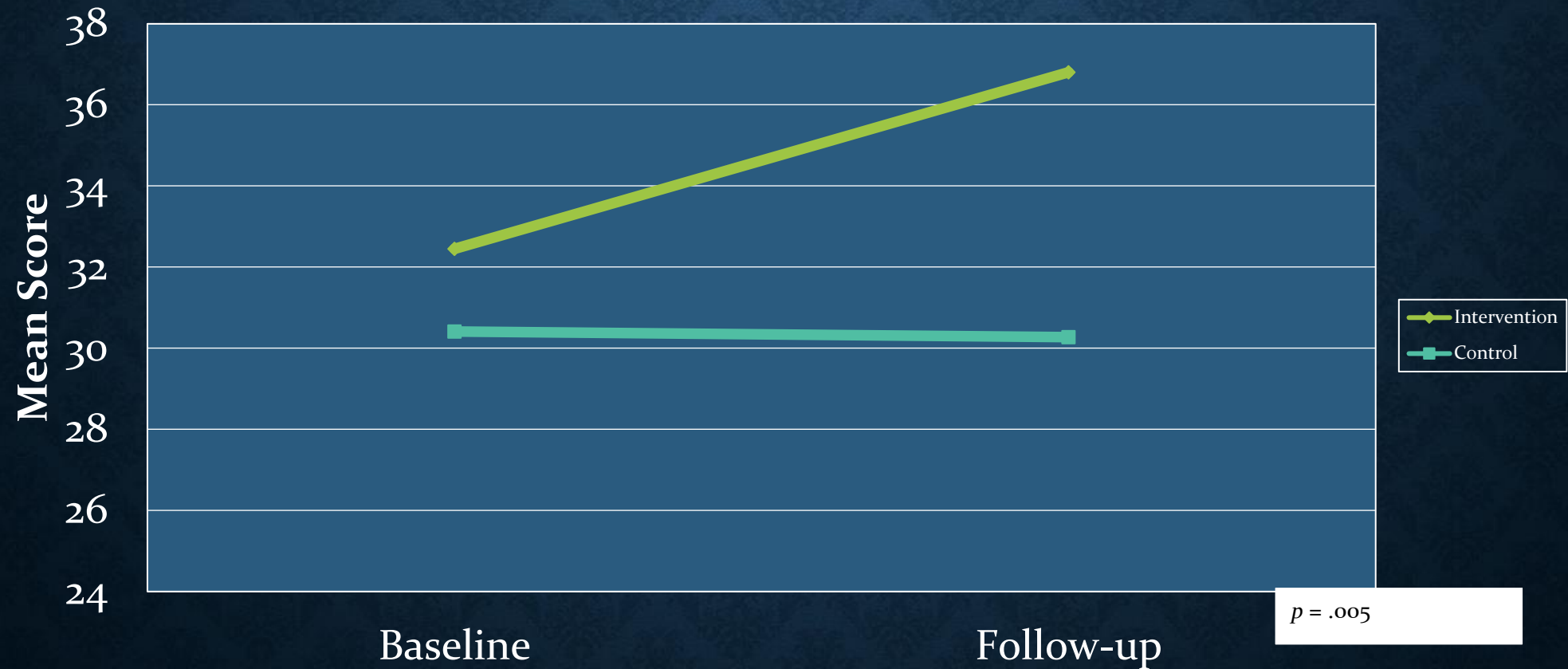
Significant differences noted *between* the intervention vs control group measured at follow up using independent samples t tests in:

Total TREE questionnaire score
($t = 2.96$; $d = .92$; 95% CI, .27 to 1.55; $p = .005$)

Self reported *frequency of promoting* talking to, reading to, and being positive and encouraging with young children
(all p-values between .005 to .03)

Self reported *confidence* in fostering positive interactions, conveying child development, and providing positive feedback to parents
(all p-values between .005 to .03)

TREE QUESTIONNAIRE TOTAL SCORE



TREE STUDY RESULTS: PEDIATRIC RESIDENTS

Significant changes noted *within* groups measured at baseline and follow up using paired samples t tests in:

Intervention group- **7 out of 10 TREE questionnaire** (p -values between $p < .001$ to $p = .03$)

Control group- **2 out of 10 items** (fostering positive interactions and addressing psychosocial issues (p -values = .005 to .04)

Satisfaction with well child visits over time (intervention $p = .03$ vs control $p = .20$)

TREE STUDY SUMMARY

First tier universal public health intervention

Delivered *directly* by pediatric primary care providers during well child encounters

Cost effective (no additional staff required), brief, easily learned and replicated

Emphasizes *relational health* by enhancing caregiver-child interactions in low-income families

TREE STUDY SUMMARY

Addresses gaps in parental knowledge,
performance and confidence

Increased caregiver-child interactions in *verbal
responsivity, play, and reading behaviors*

Increased pediatric resident self report of
confidence and performance of *relational health
skills* as endorsed by the AAP

TREE STUDY: LIMITATIONS

Two different patient community groups chosen for study

Loss of patient follow up due to COVID-19 pandemic

Self-reported results in caretakers and pediatric residents introduces bias

Resident intervention group was aware they were receiving TREE training

TREE STUDY: FUTURE DIRECTIONS

Follow up efficacy studies evaluating impact on child development in low- income populations using larger numbers of patients

TREEHOUSE: 30 -minute dedicated telehealth developmental coaching sessions at ages 9 and 15 months (in addition to well child visits) to address child development more comprehensively

TREE STUDY TEAM

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TREE STUDY TEAM

