Center for Early Learning
+ Public Health

# TMW: A Public Health Approach to Early Learning

@TMWCenter
@DrDanaSuskind

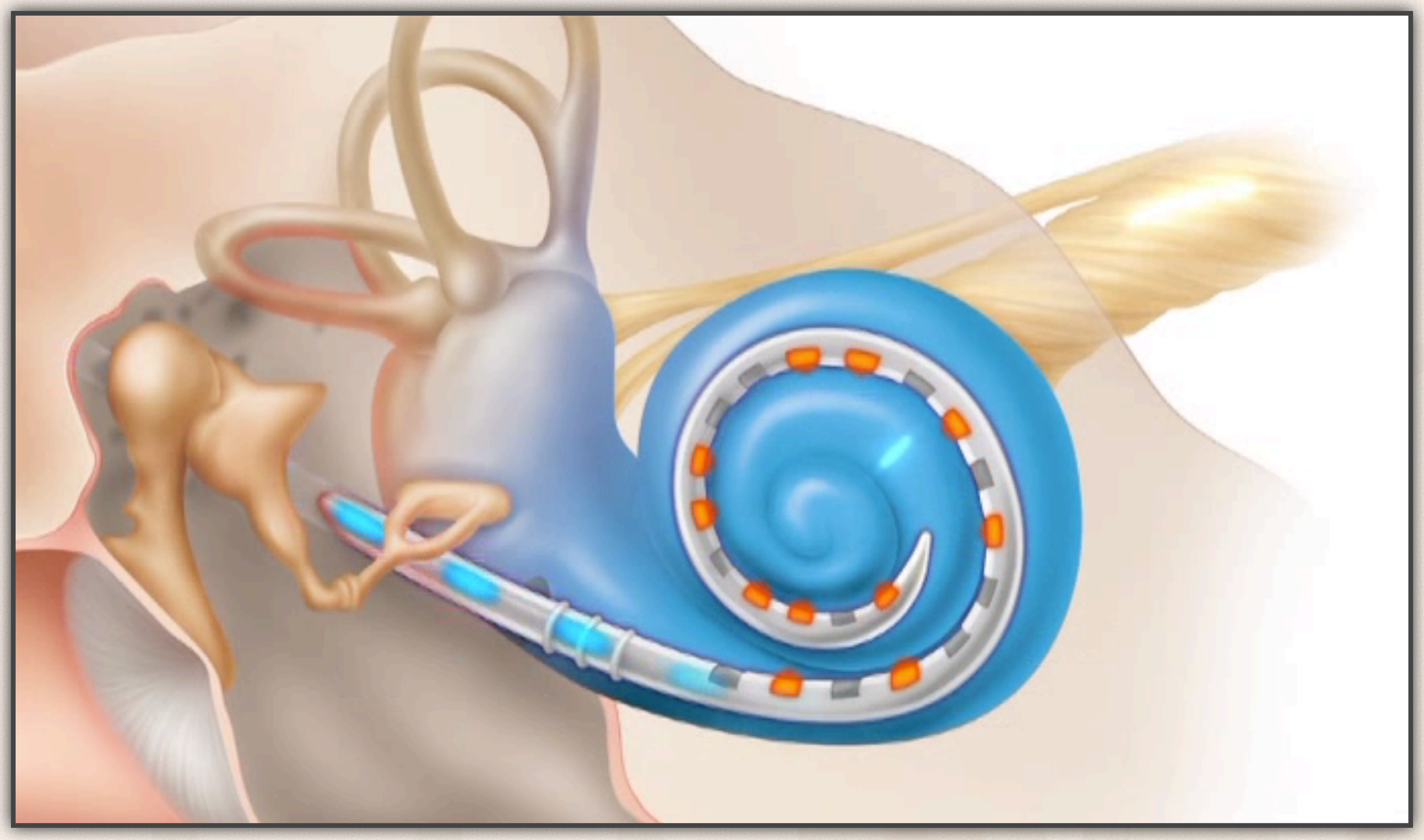
Dana Suskind, MD

THE UNIVERSITY OF CHICAGO MEDICINE

# Overview

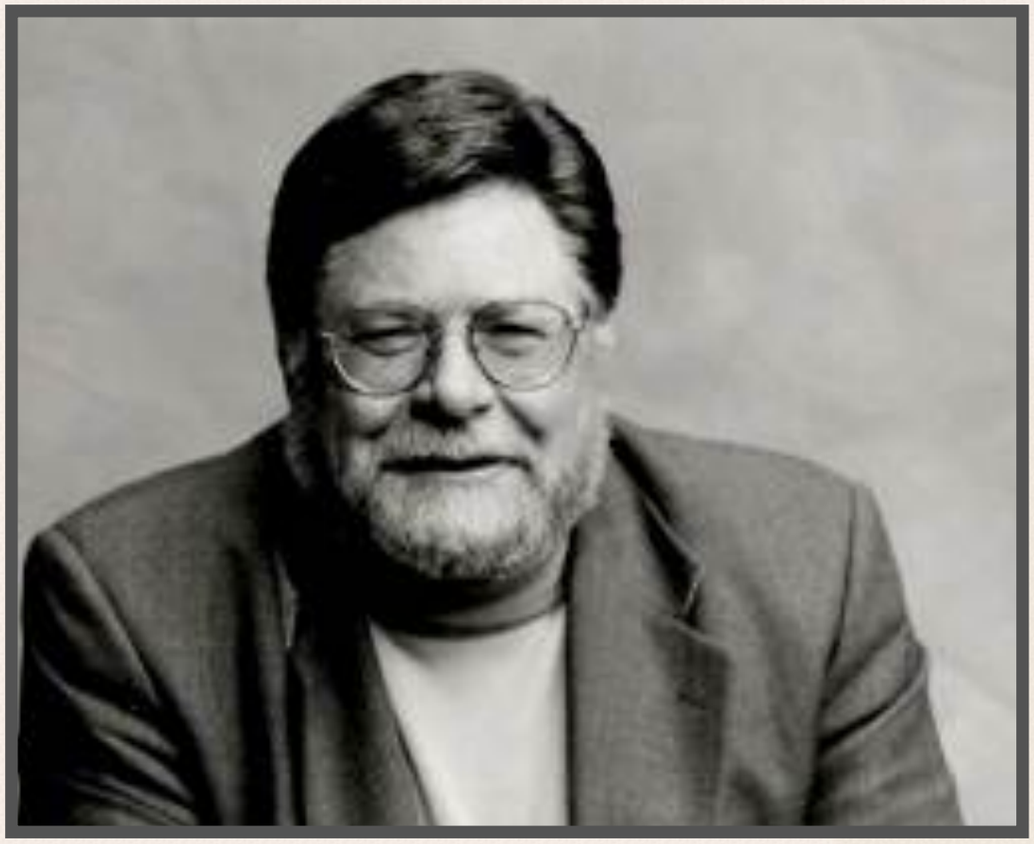
- The case for a *parent*-centered public health approach to early learning
    - Landscape of our young children
    - Background science
        - Early disparities
        - Parents: An untapped resource
- TMW Overview
- *Parent*-Centered Public Health Model: TMW & our learnings
- TMW community-wide demonstration project

Center for Early Learning
+ Public Health



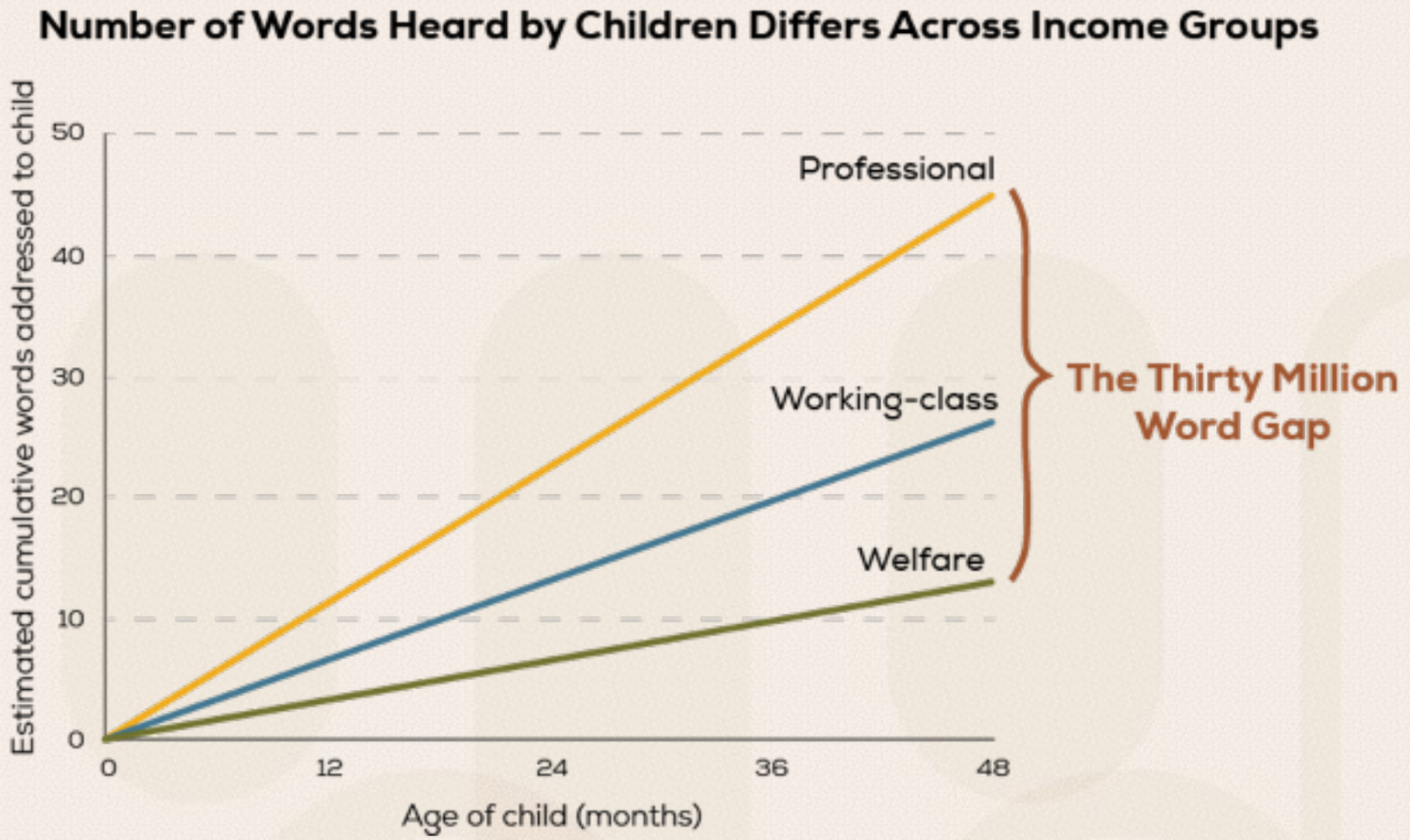
Center for Early Learning
+ Public Health

# Hart & Risley



# *Meaningful Differences:* Hart and Risley

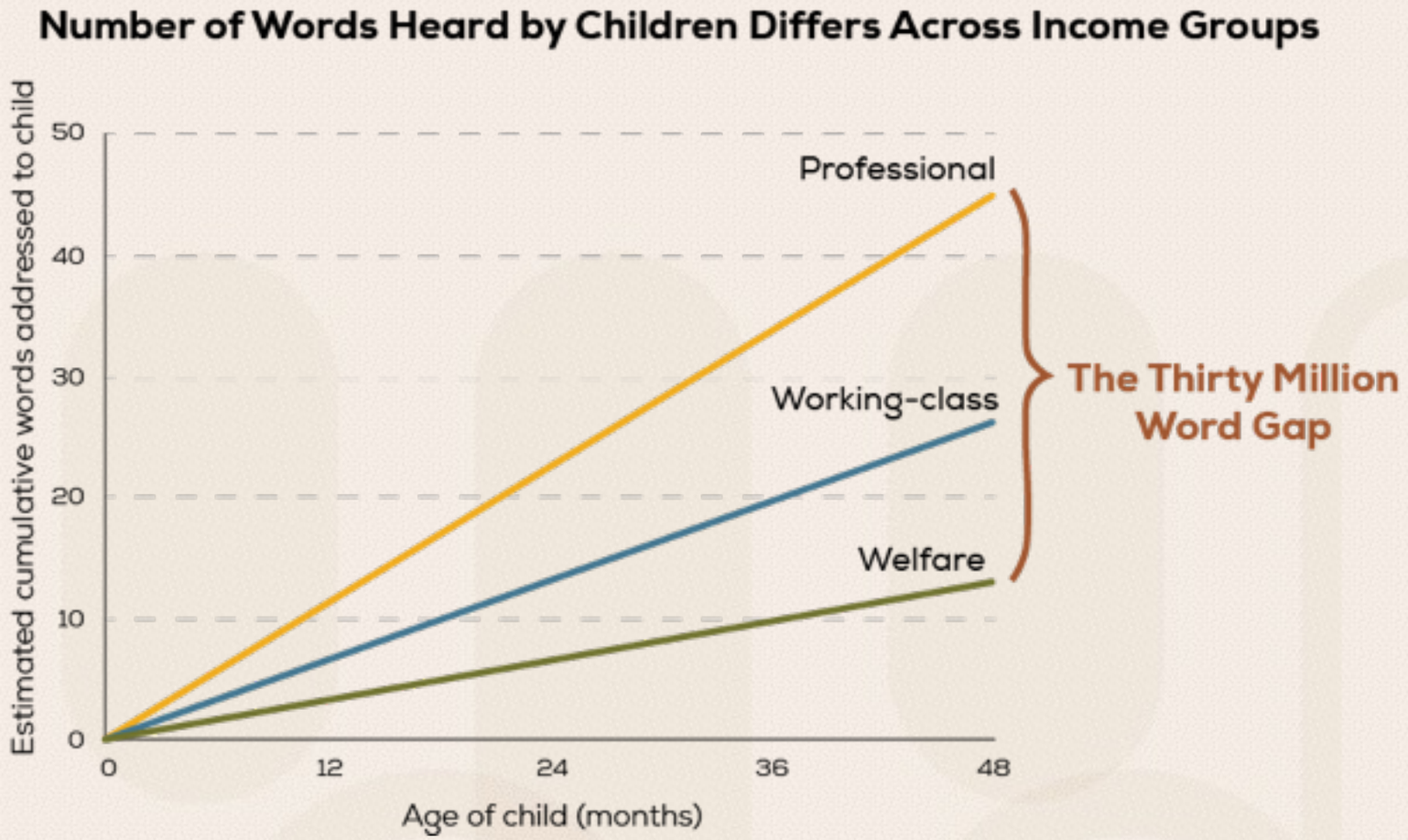
Variation among families regarding the early language environment provided to infants results in huge and consequential differences in "learning opportunities" over the first years of life.




(Hart and Risley, 1995)

# Four Million Word Gap
# Thirty Million Word Gap

Variation among families regarding the early language environment provided to infants results in huge and consequential differences in “learning opportunities” over the first years of life.




(Hart and Risley, 1995)

# ~~Four Million Word Gap~~

# Power of Parent Talk & Interaction

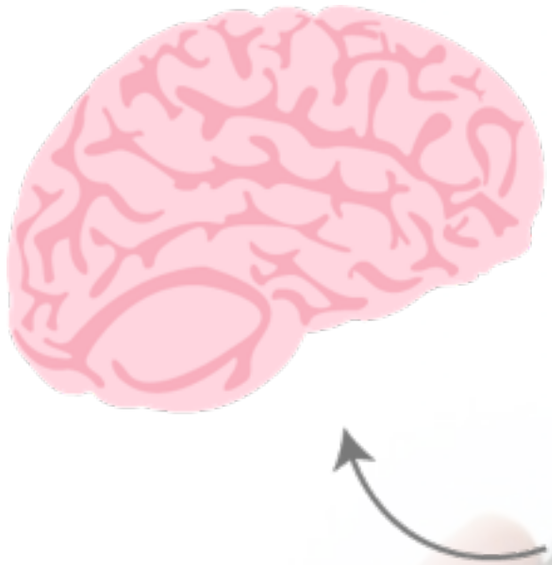
(Hart and Risley, 1995)

# Early Language Environments

- Critical for building children’s ability to communicate and learn
- Parent talk fosters children’s language, cognitive and executive function skills such as:
    - Language
    - Literacy
    - Math and spatial reasoning
    - Executive function and self-regulation
    - Socio-emotional
    - Attachment

(Connell & Prinz, 2002; Forget-Dubois et. al., 2009; Walker, Greenwood, Hart and Carta, 1994)

# It All Comes Down to the Brain



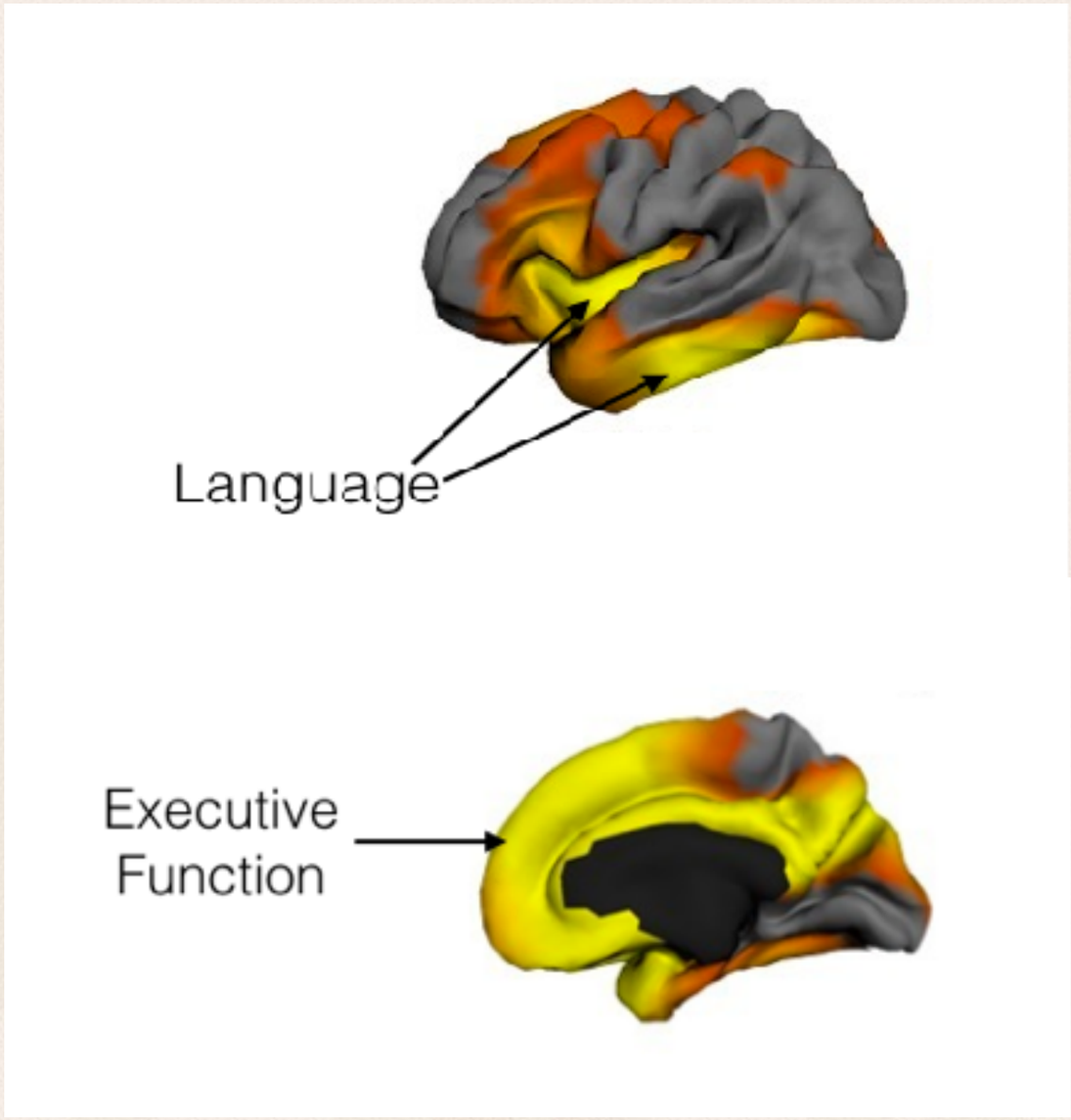
Center for Early Learning
+ Public Health

# Impacts of Poverty on Brain Structure: Key Areas of Academic Interest

- The areas most impacted by poverty happen to be those that are most critical to educational attainment

- Language: Left Hemisphere Language Cortex

- Executive Functioning: Prefrontal Cortex




Center for Early Learning + Public Health

**Nature**
Volume 18, pages 773-778, 30 MARCH 2015 DOI: 10.1038/nn.3983
http://www.nature.com/neuro/journal/v18/n5/full/nn.3983.html

# Parent Input - Brain - Child Skills Connection

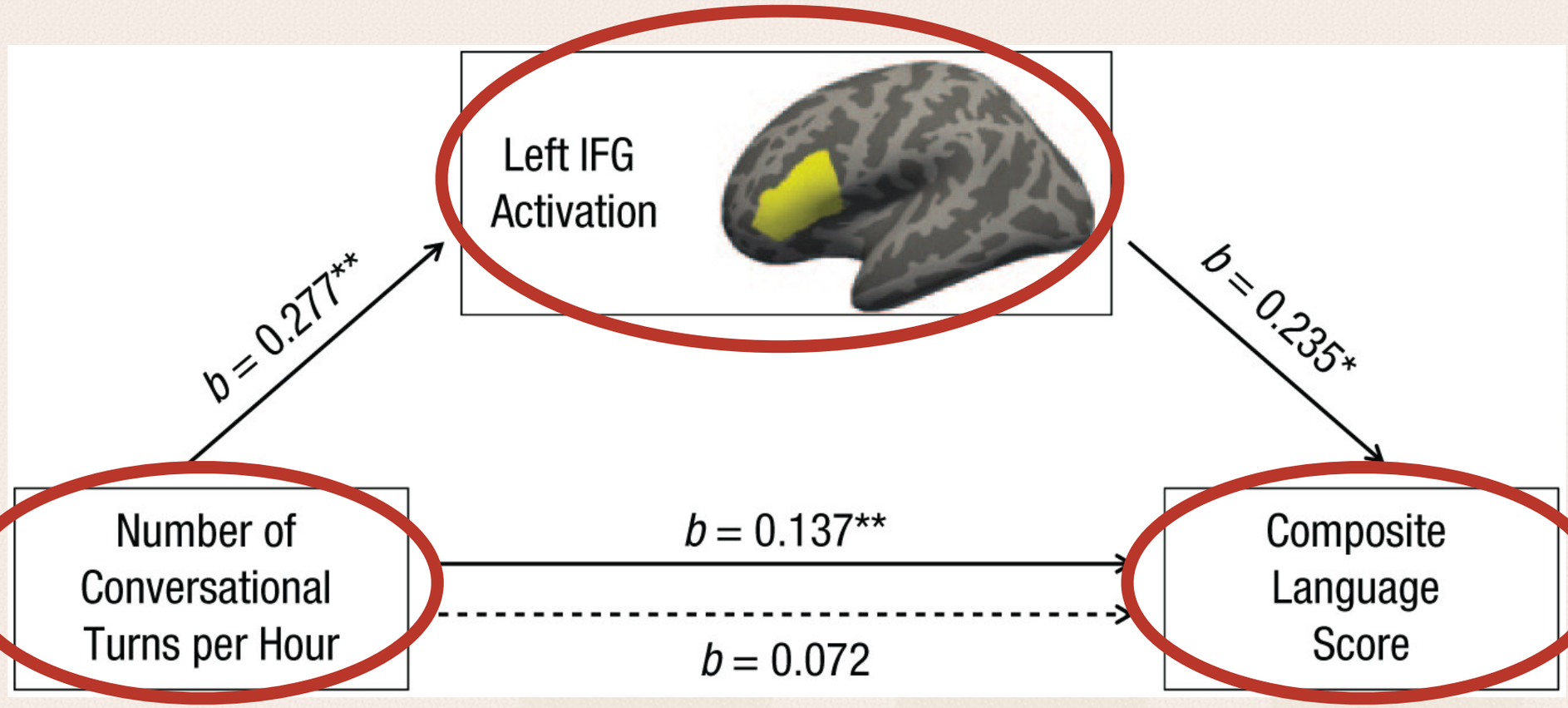
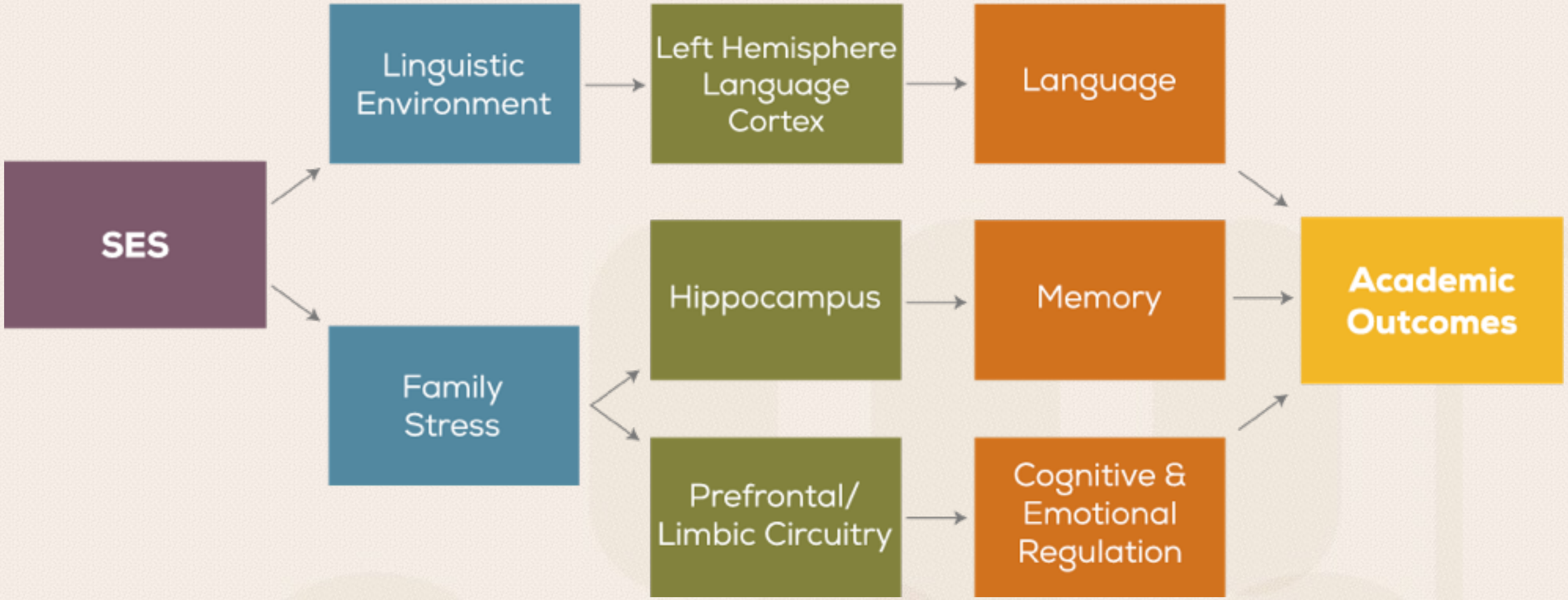



Fig. 6. Mediation model showing the effect of conversational turns on language assessment scores as mediated by activation in the left inferior frontal gyrus (IFG), shaded in yellow. Activation significantly mediated the relation between the number of conversational turns children experience and their language scores. Solid arrows represent direct paths, whereas the dotted arrow represents the indirect (mediated) path. Asterisks indicate significant paths (*$p < .01$, **$p < .001$).

(Romeo et. al, 2018)

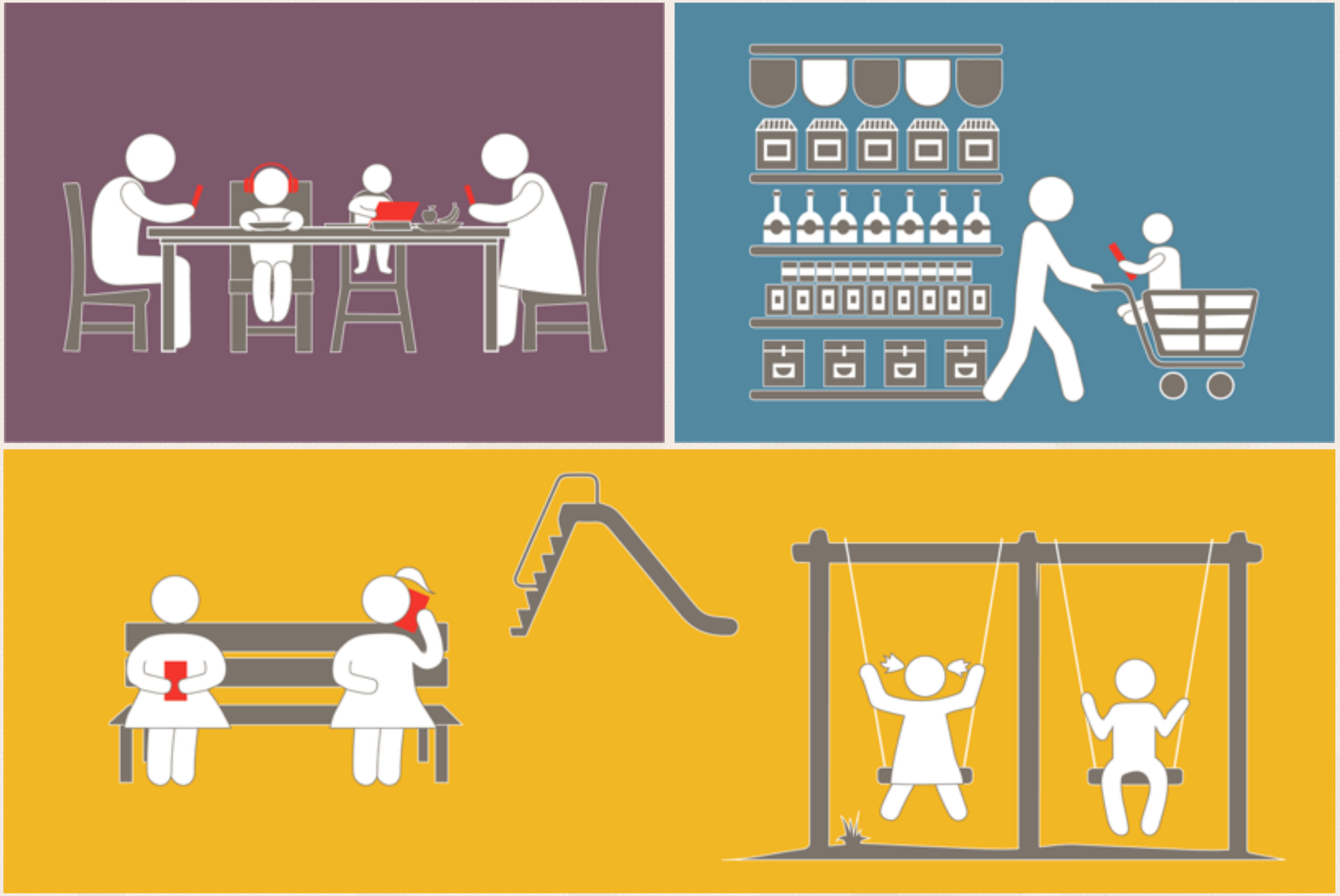
# Neural Correlates of SES in the Developing Human Brain




Developmental Science Volume 15, Issue 4, pages 516-527, 29 MAR 2012
DOI: 10.1111/j.1467-7687.2012.01147.x
http://onlinelibrary.wiley.com/doi/10.1111/j.1467-7687.2012.01147.x/full#f1

Center for Early Learning + Public Health

# Technology's Impact on Parent-Child Interaction: We're All at Risk



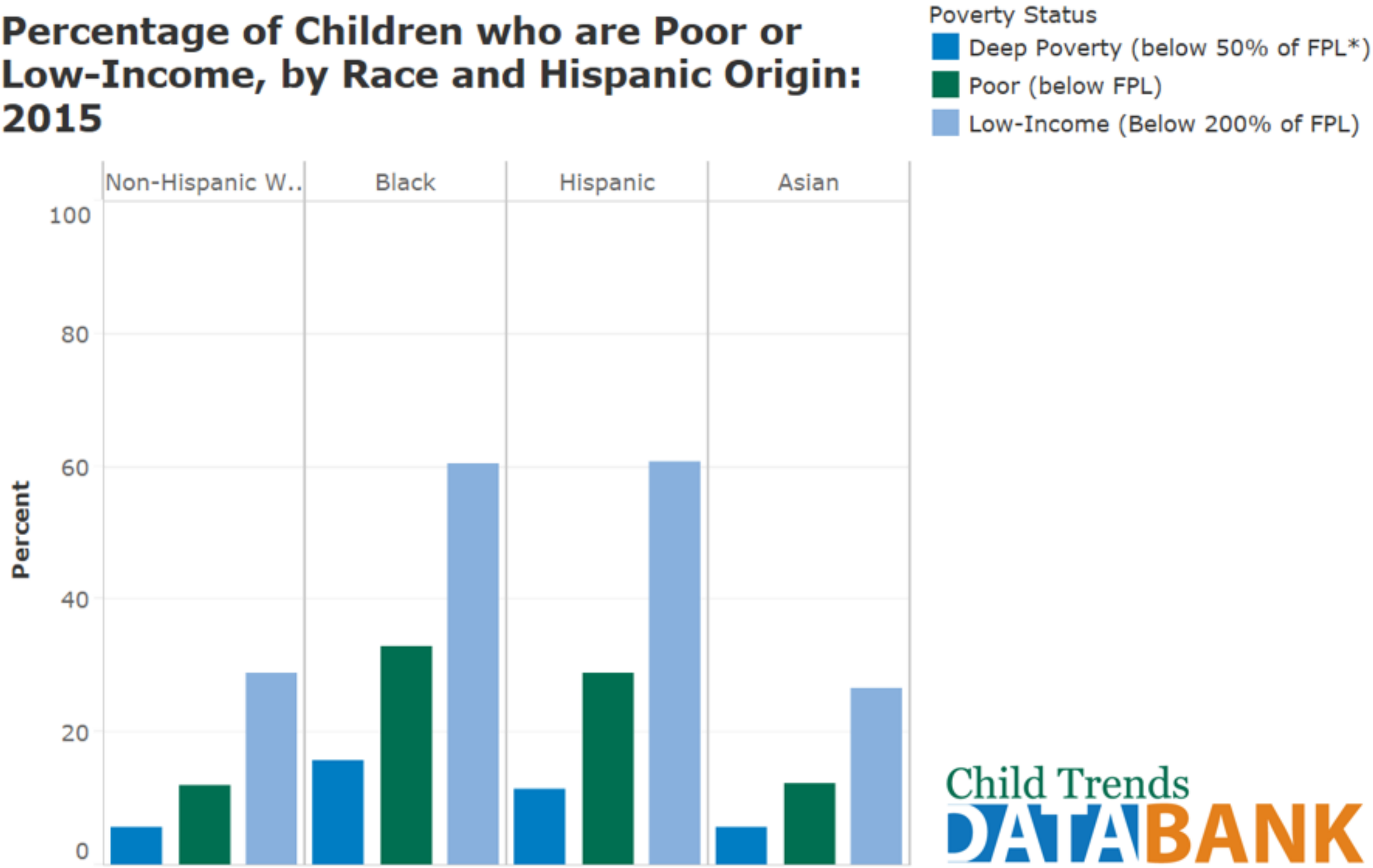
Reed J, Hirsh-Pasek K, Golinkoff RM. Dev. Psychol. 2017; 53(8): 1428-1436.

Center for Early Learning + Public Health

# Inequalities at the Starting Gate


**Source:** EPI analysis of the Early Childhood Longitudinal Study, Kindergarten Class of 2010–2011 (U.S. Department of Education, National Center for Education Statistics), reflecting standard deviation differences in scores. For more details see *Inequalities at the Starting Gate* at go.epi.org/startinggate.

# Percentage of Children who are Poor or Low-Income, by Race and Hispanic Origin: 2015

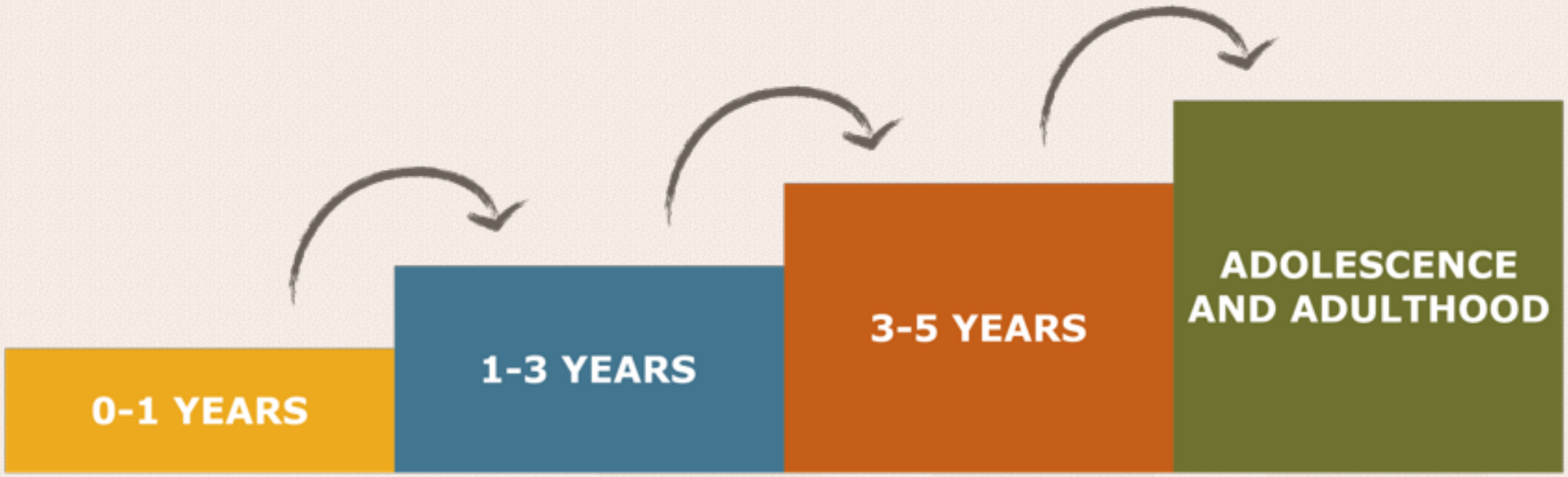



Child Trends DATABANK

*Federal poverty level.
Note: Estimates reflect the new OMB race definitions, and include only those who are identified with a single race. Hispanics may be of any race.
*Source*: U.S. Census Bureau. CPS Table Creator (online tool), available at: http://www.census.gov/cps/data/cpstablecreator.html

Children in Poverty, Child Trends (December 2016) https://www.childtrends.org/indicators/children-in-poverty/

# Differences in foundational brain development start early and accrue over time




As early as nine months old, **infants born into poverty score lower on cognitive development** measures than do their more affluent peers

This **disparity triples by the age of two**, and grows significantly through a child's early years

Each year **~1M low-income students enter kindergarten lacking key competencies** to be ready to learn, with many preschool interventions occurring too late

This results in a **cascade of consequences** for cognitive and social-emotional development, academic attainment, occupational status, and later-life health and social well-being

Sources: Halle, T., Forry, N., Hair, E., & Perper, K. (2009). Disparities in Early Learning and Development: Lessons from the Early Childhood Longitudinal Study - Birth Cohort (ECLS-B)i Executive Summary, (June). Forget-Dubois, N., Dionne, G., Lemelin, J.P., Perusse, D., Tremblay, R.E., Boivin, M. Early child language mediates the relation between home environment and school readiness. Child Dev. May-Jun 2009;80(3):736-749. Schoon, I., Parsons, S., Rush, R., & Law, J. (2010). Childhood Language Skills and Adult Literacy: A 29-Year Follow-up Study. Pediatrics, 125(3), 459-e466. http://doi.org/10.1542/peds.2008-2111.

# TMW’s North Star

*"Because the brain is the organ from which all cognition and emotion originates, healthy human brain development represents the foundation of our civilization. Accordingly, there is perhaps nothing more important that a society must do than foster and protect the brain development of our children."*

**Joan L. Luby, MD**

Poverty’s Most Insidious Damage: The Developing Brain
JAMA

Center for Early Learning + Public Health

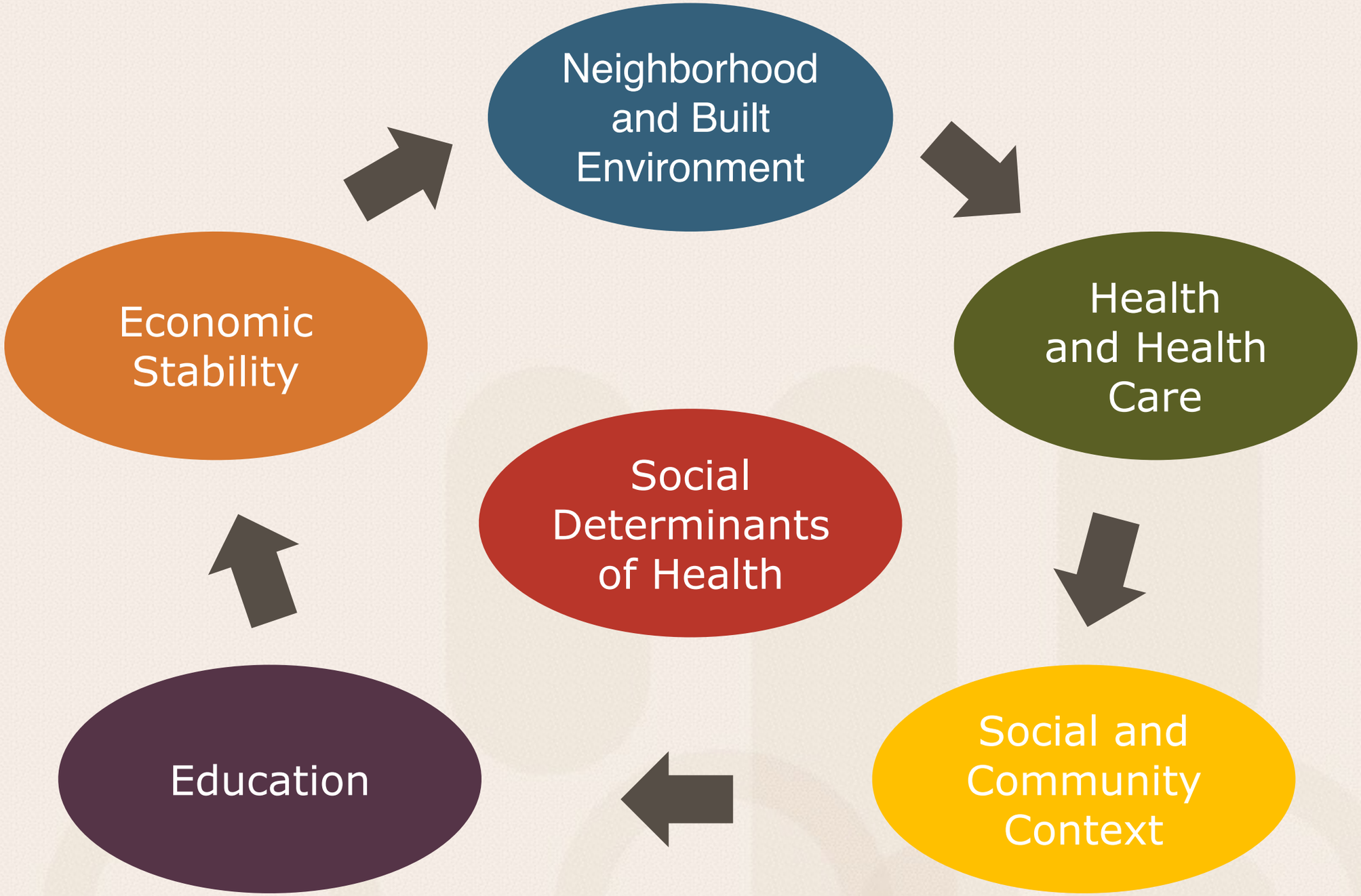
# Early Language Exposure: An Overlooked SDOH

**Social Determinant of Health**

"the conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning and quality-of-life outcomes, and risks."

U.S. Department of Health and Human Services (2018) Social Determinants of Health. Washington DC: U.S. Government Printing Office. https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health

# Early Language Exposure: An Overlooked SDOH




U.S. Department of Health and Human Services (2018) Social Determinants of Health. Washington DC: U.S. Government Printing Office. https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health

Thirty Million Words

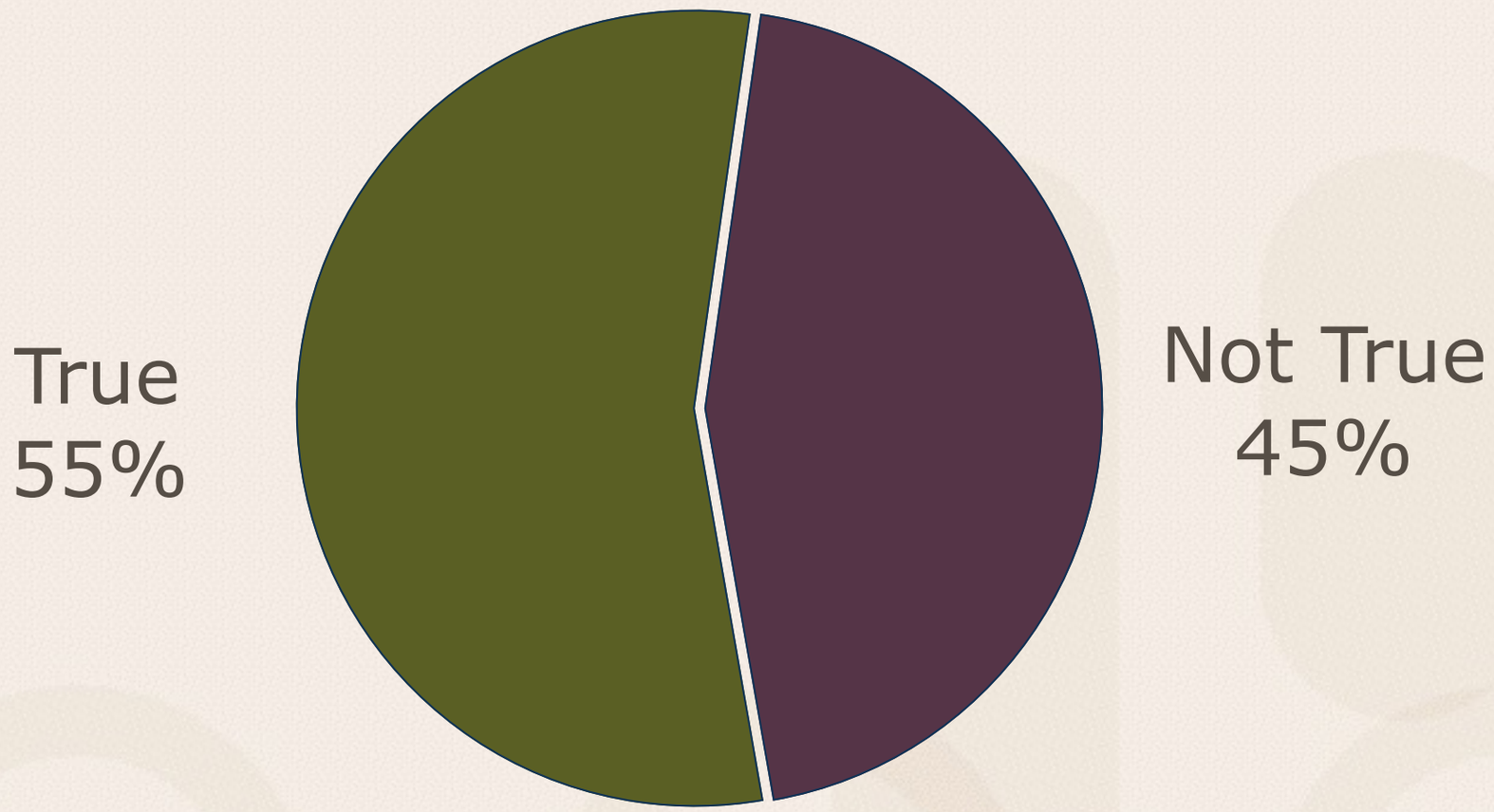
- Translational research program
- Aspires to a population-level shift in knowledge and beliefs
- Focuses on prevention rather than remediation
- Develops and tests parent- and provider-directed interventions
- Targets birth to 3 years of age

# What is a Public Health Approach?


- Population level health & Impacts at Scale
- Focuses on prevention, rather than remediation
- Embeds science-based practices in multiple touch points in existing early learning and public health systems
- Employs a data-driven methodology
- Optimizes feedback-driven solutions at community and population levels

# Parent Beliefs

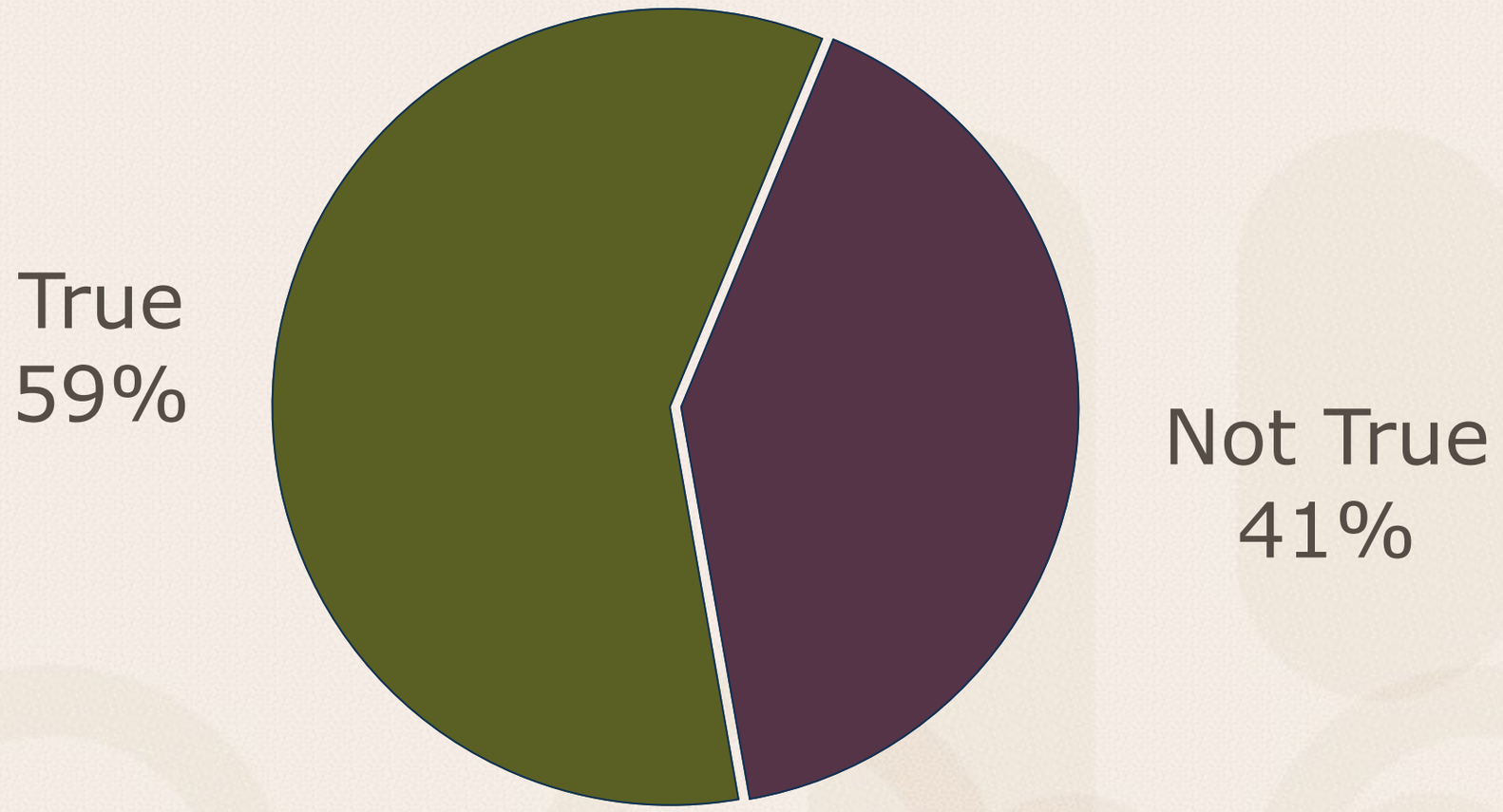
*Basic care, such as feeding, changing, and bathing, is the only thing an infant really needs for healthy development*




(TMW-WB Study, 2018)

# Parent Beliefs

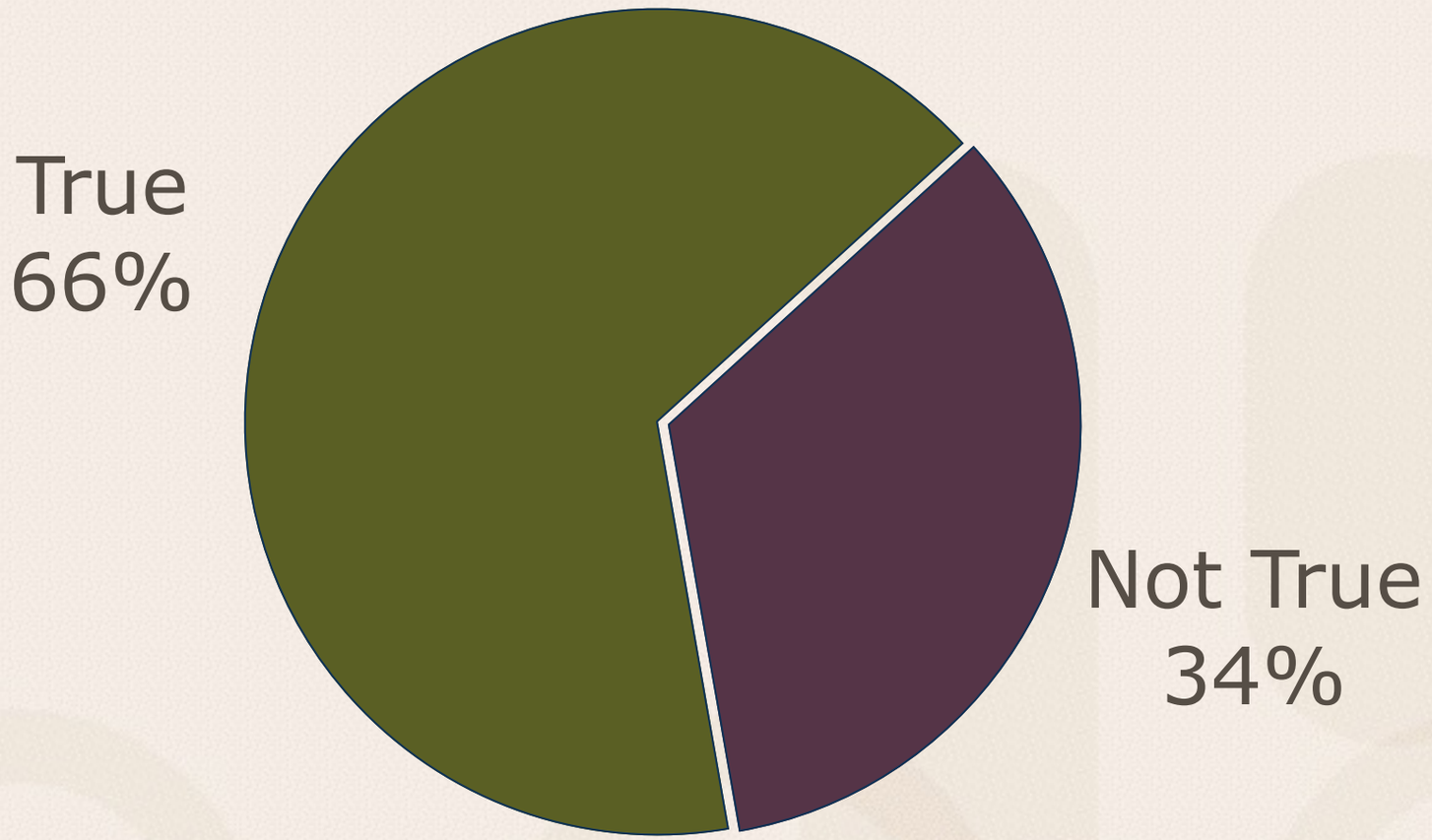
*Leaving the TV on in the background is a great way to give 0 to 2 year olds extra chances to learn words*




(TMW-WB Study, 2018)

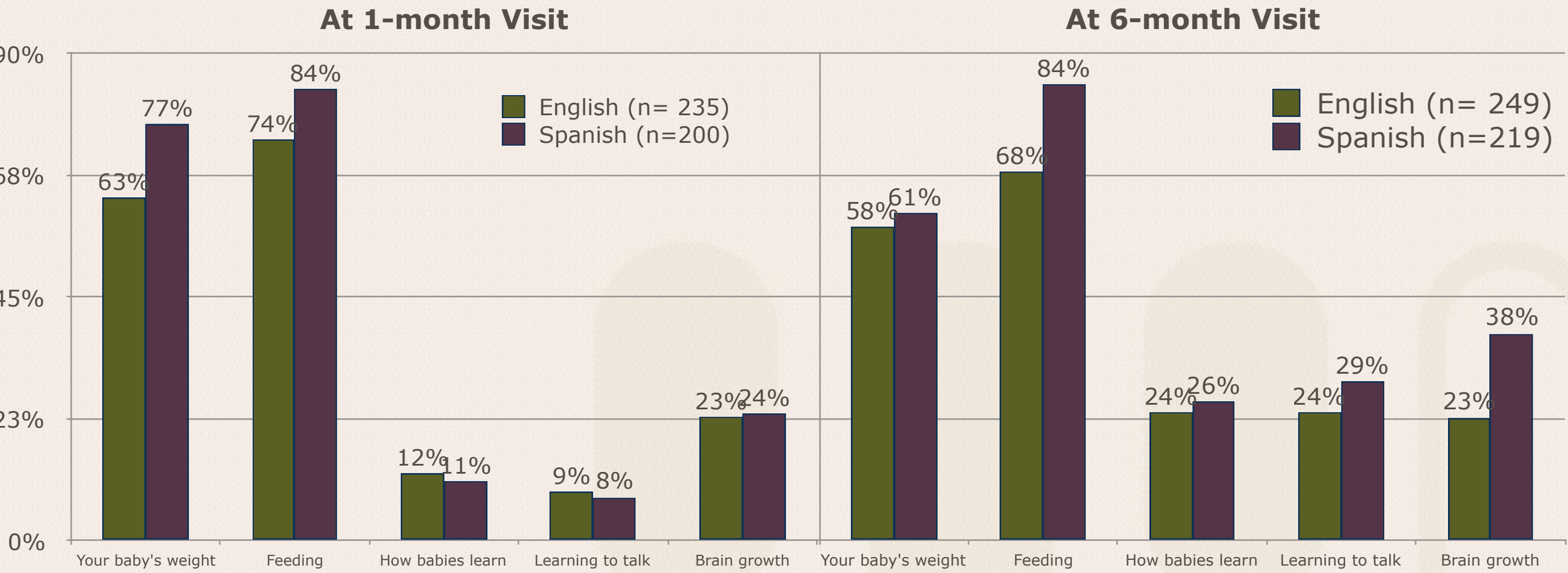
# Parent Beliefs

*Infants learn little about language in the first six months of their life*




(TMW-WB Study, 2018)

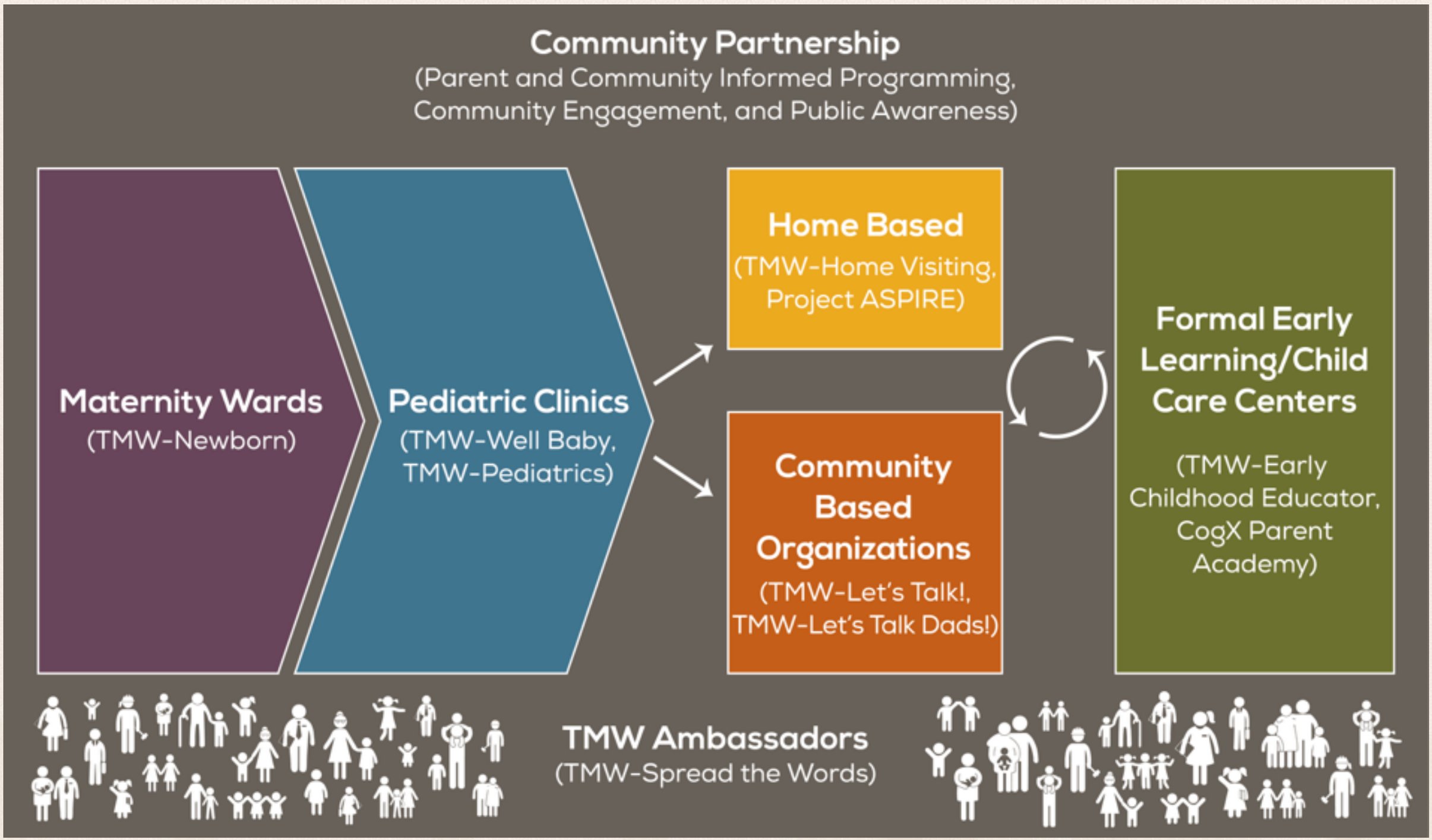
# What Pediatricians Talk about at Well-Child Visits




(TMW-WB Study, 2018)

Center for Early Learning + Public Health

# TMW's Model for a *Parent*-Centered Public Health Approach to Early Learning



# Overlaying onto Public Health Infrastructure

# Growth-Mindset Parenting

# the 3Ts

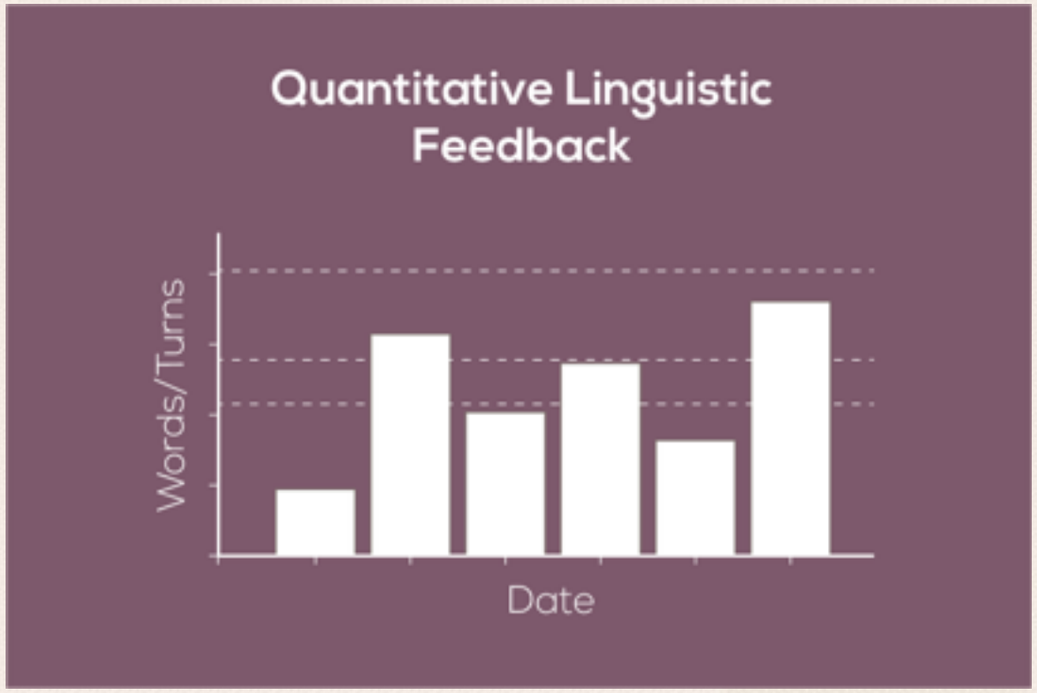
TUNE IN

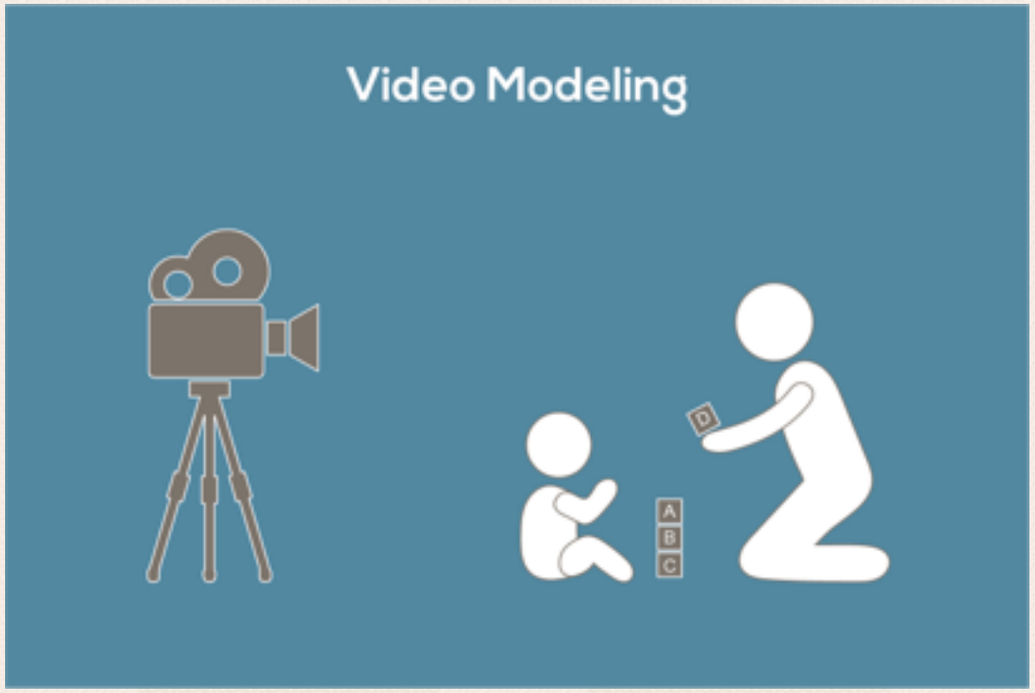
TALK MORE

TAKE TURNS

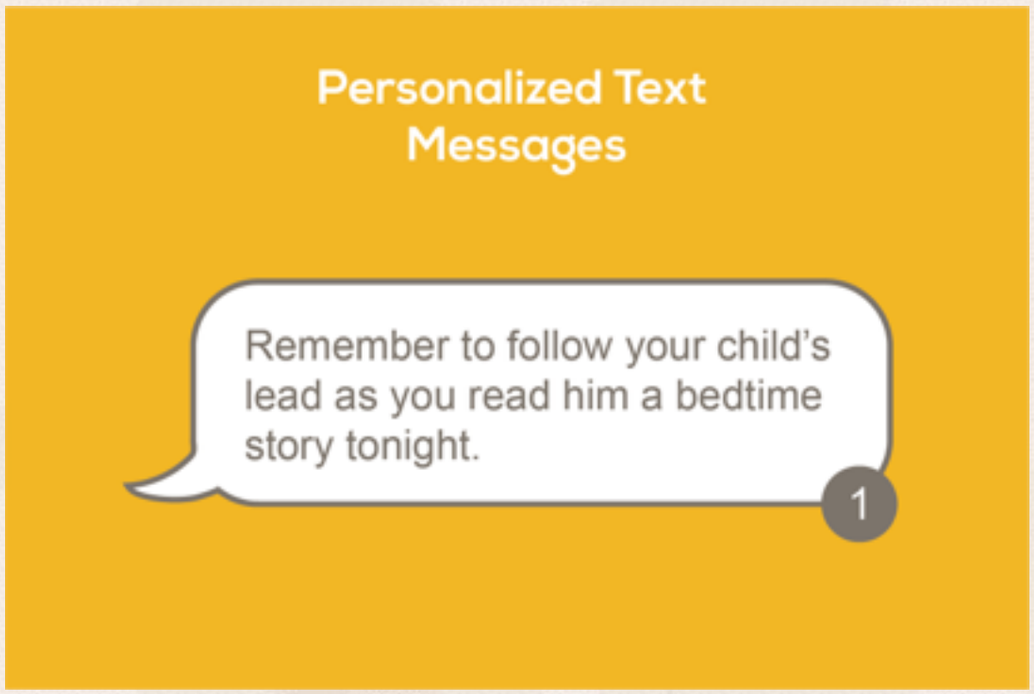
Center for Early Learning + Public Health

# Behavioral Nudges



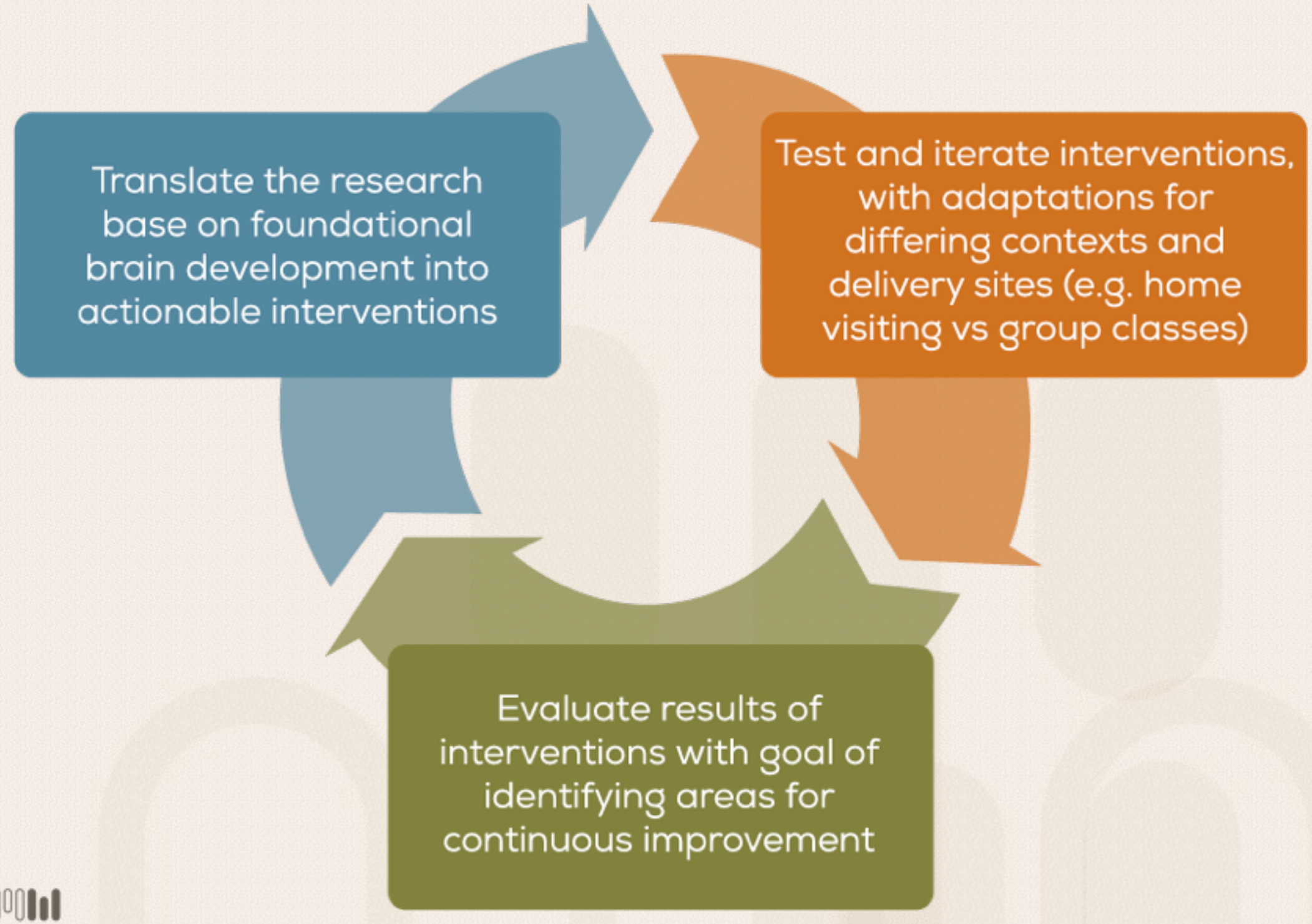








Center for Early Learning + Public Health

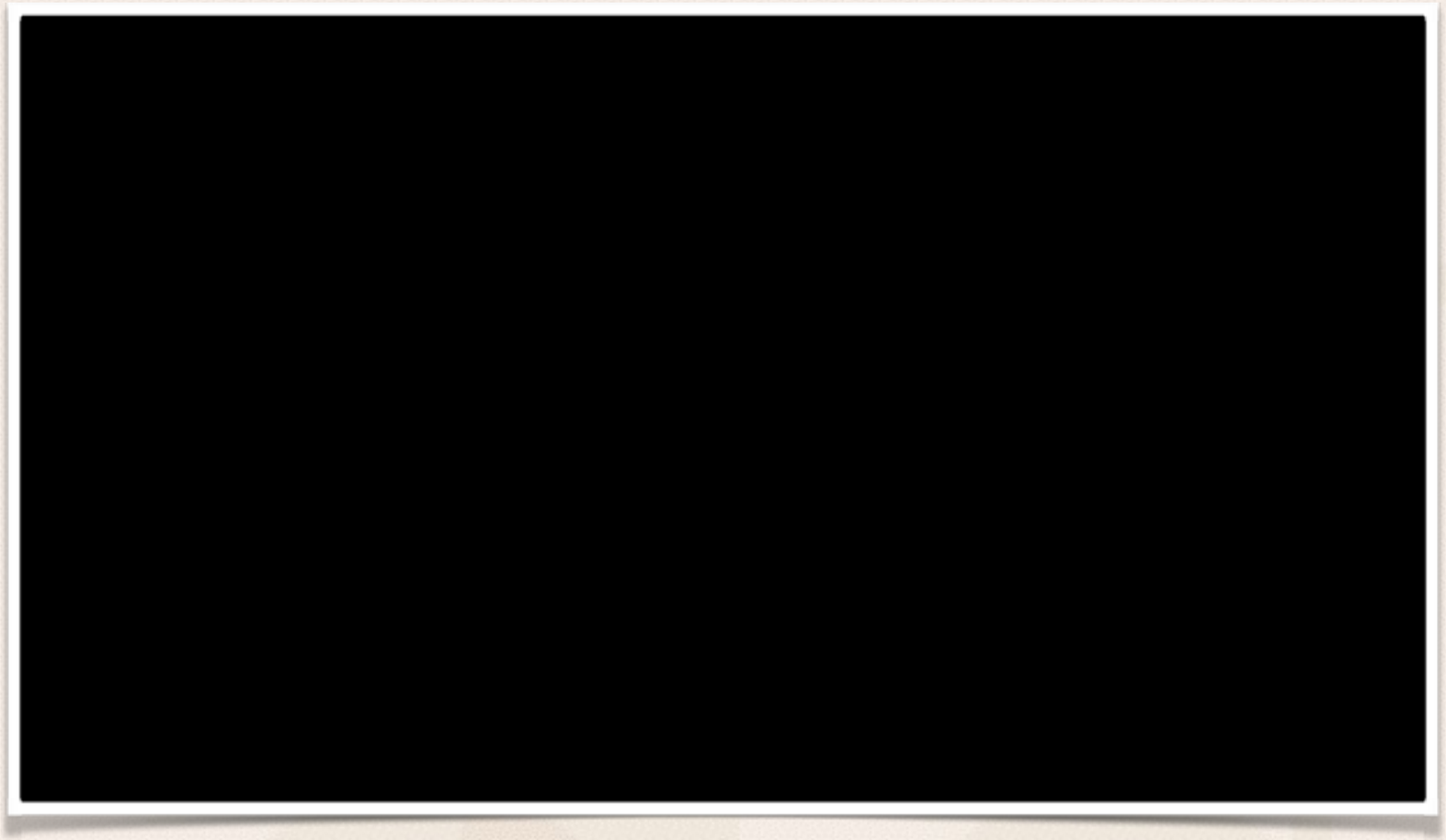
# Science as the Basis for Real Social Change




Center for Early Learning + Public Health

# TMW-Newborn

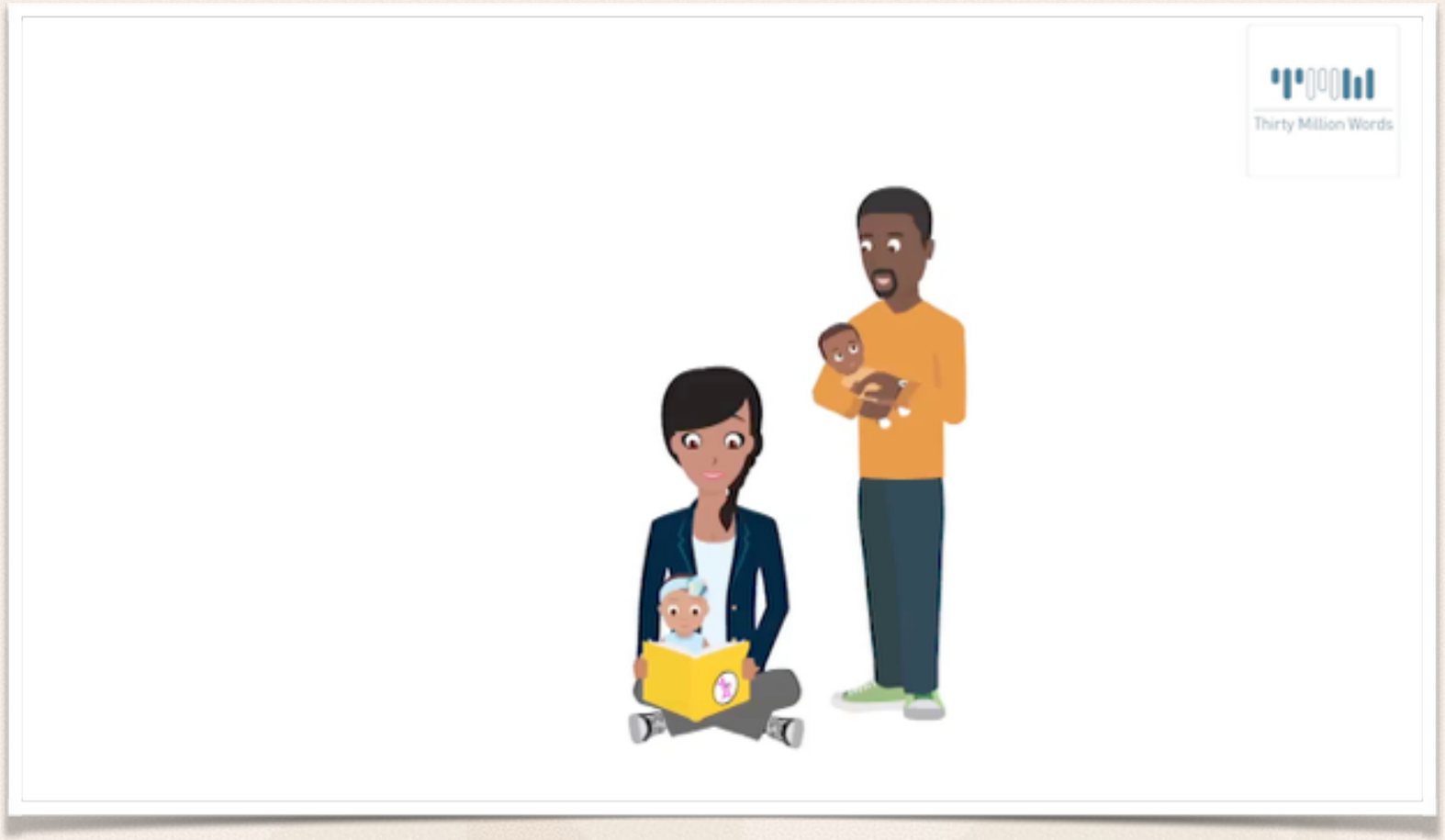
- 10-minute, bilingual video with multimedia content
- Administered postpartum, mapped onto the UNHS
- RCT with 500 families
- Aims to impact parents' knowledge and beliefs about child language development



Center for Early Learning + Public Health

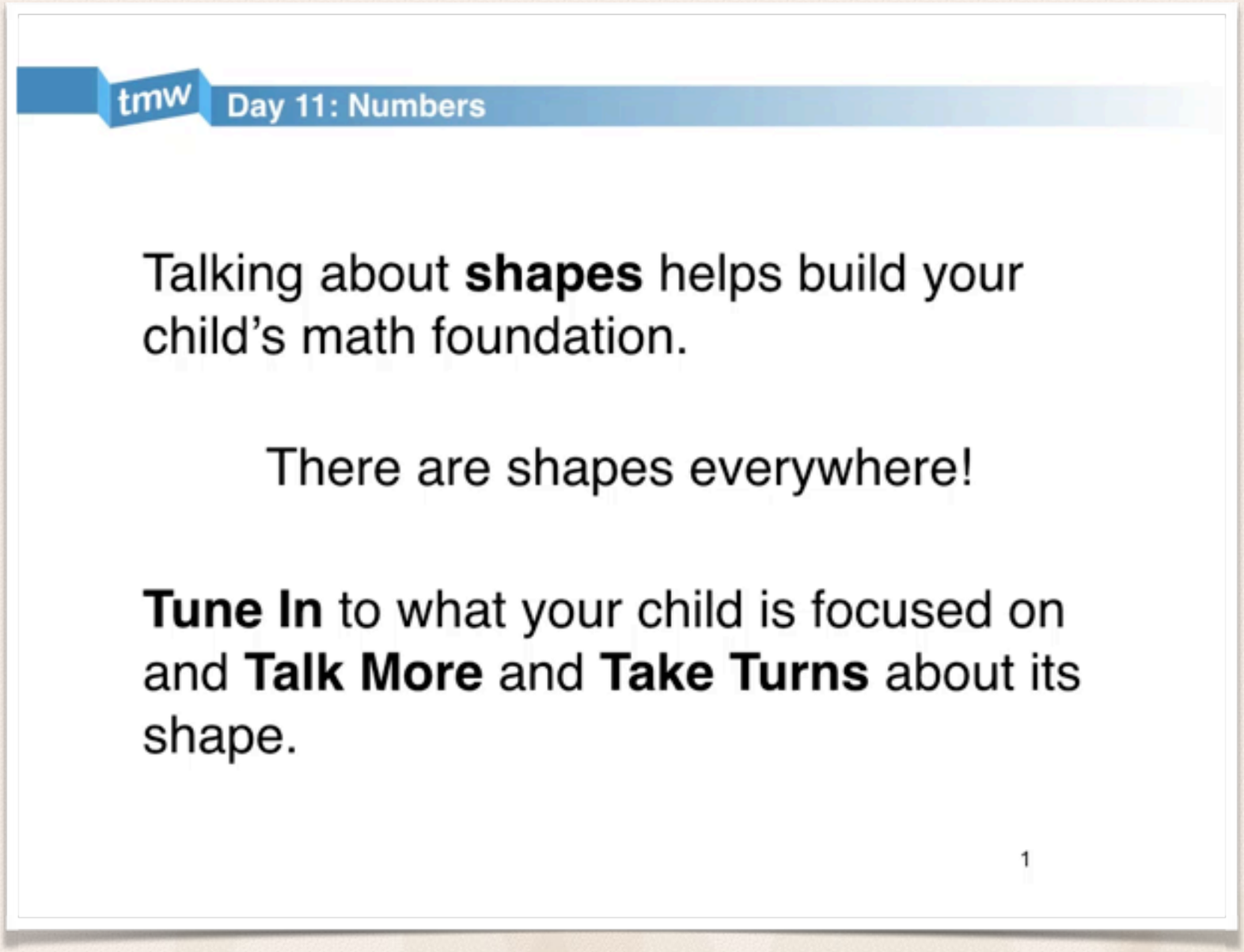
# TMW-Well Baby

- Series of 4, 10-minute videos
- Bilingual, multimedia content
- Mapped onto Well Child Checks at 1-, 2-, 4-, and 6-month pediatric visits
- Designed to reach parents from the start
- RCT with 500 families



# TMW-Home Visiting: English

- Series of 12, 60 minute modules
- Delivered in the home biweekly for 6 months
- Integrates behavioral nudges, video modeling, and multimedia content
- RCT with 200 families

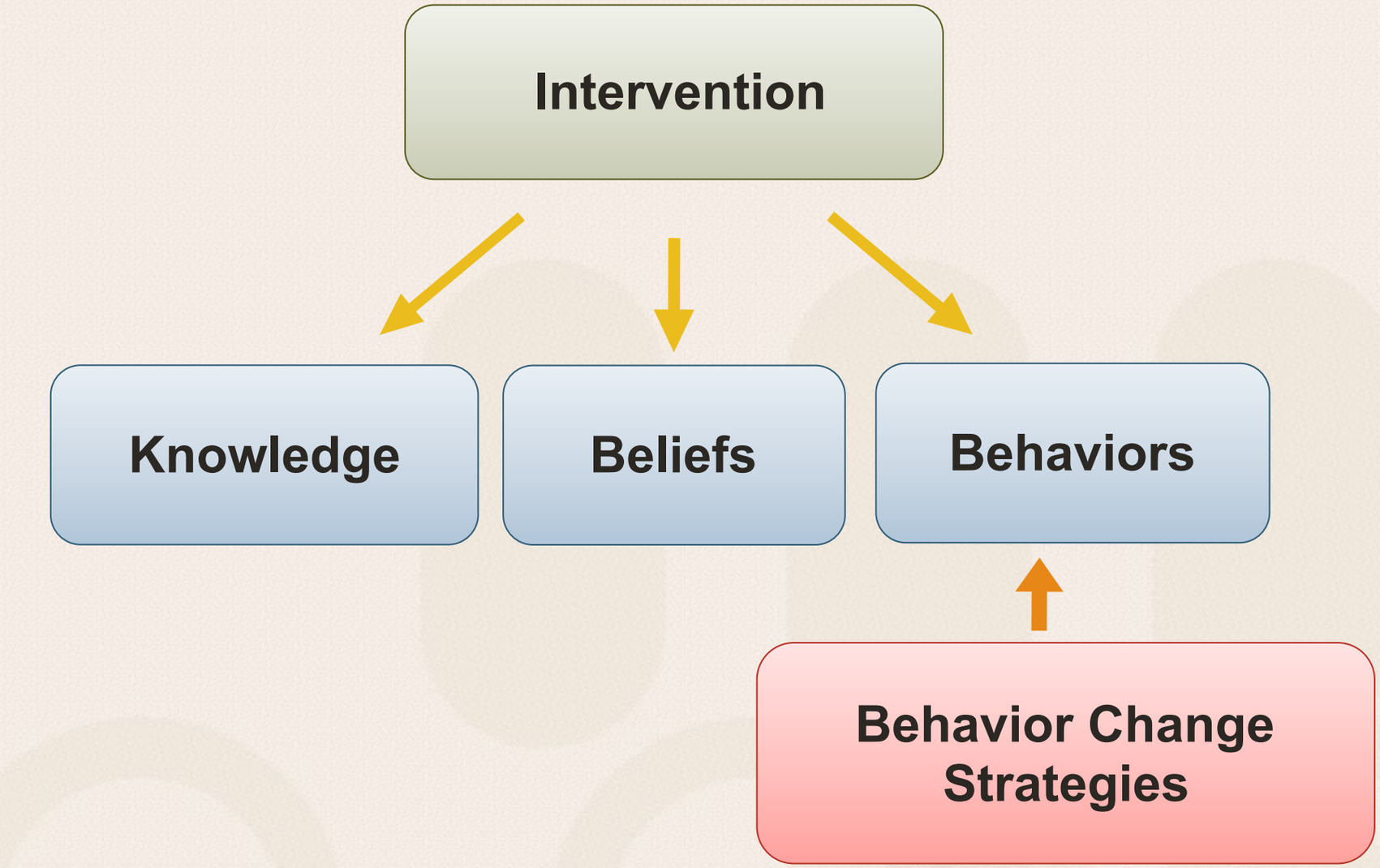



Center for Early Learning + Public Health

# Home Visiting Curriculum Iteration

| Modules | Description |
|---|---|
| 1. Introduction | Brain development, emphasis of parent as key player |
| 2. Talk More | Increasing parent talk |
| 3. Tune In | Joint attention, responsiveness, child-directed speech |
| 4. Take Turns | Conversational turn taking |
| 5. Spread the Words | Spreading key messaging through social networks |
| 6. Behavior Stoplight | Supporting self-regulation (executive functioning) |
| 7. Directives | Avoiding directives and supporting critical thinking skills |
| 8. Encouragements | Person vs. process-based praise |
| 9. Book Sharing | Dialogic book reading |
| 10. Storytelling | Building vocabulary and pre-literacy skills |
| 11. Math Talk | Using language to develop math and spatial reasoning skills |
| 12. Technology Diet | Limiting media exposure to foster more talk and interaction |

# Intervention Approach



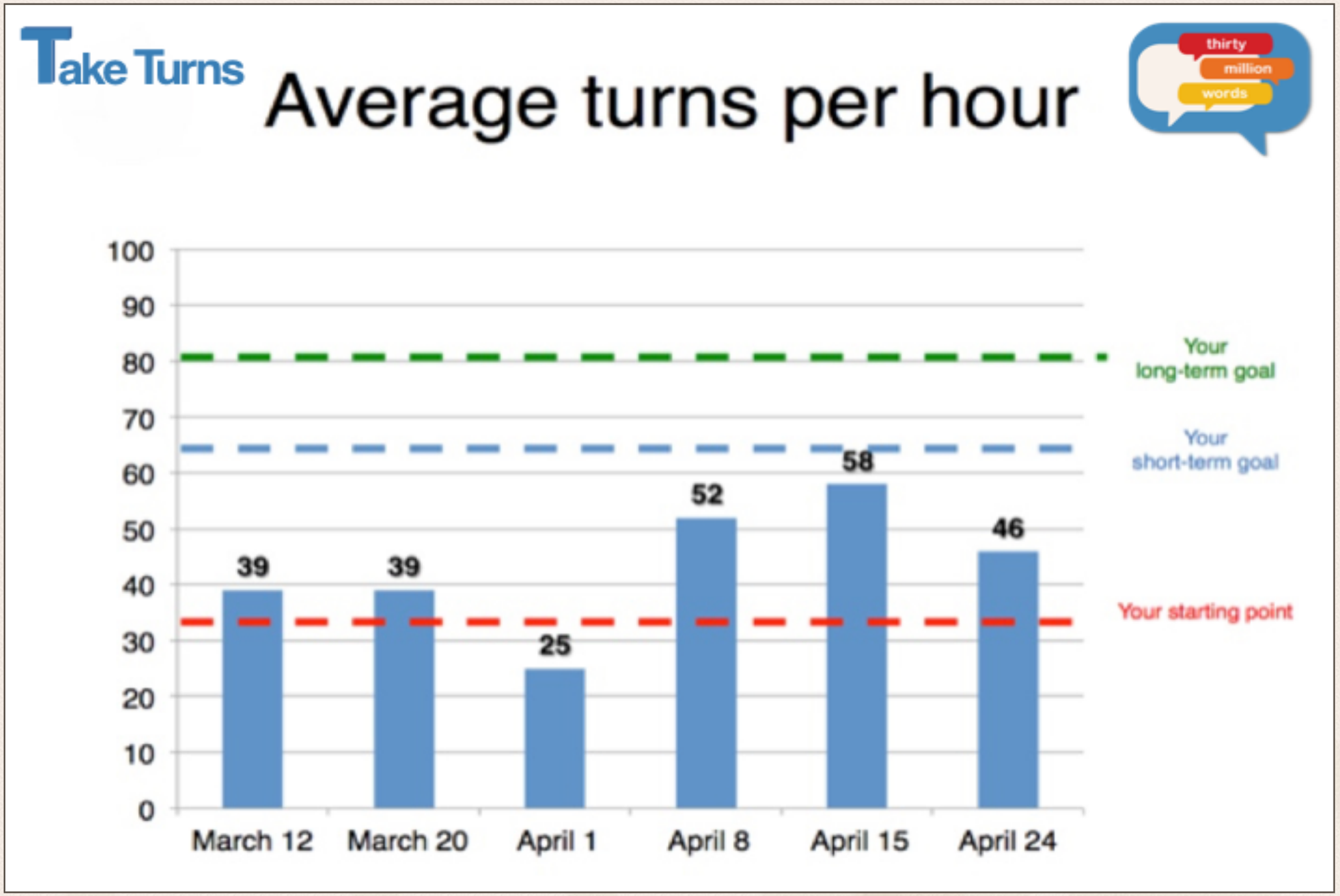
# LENA – Language ENvironment Analysis

Digital audio-recording devices and a specialized processing software

- Adult word count
- Child vocalization count
- Conversational turn count

Center for Early Learning + Public Health

# Quantitative Linguistic Feedback

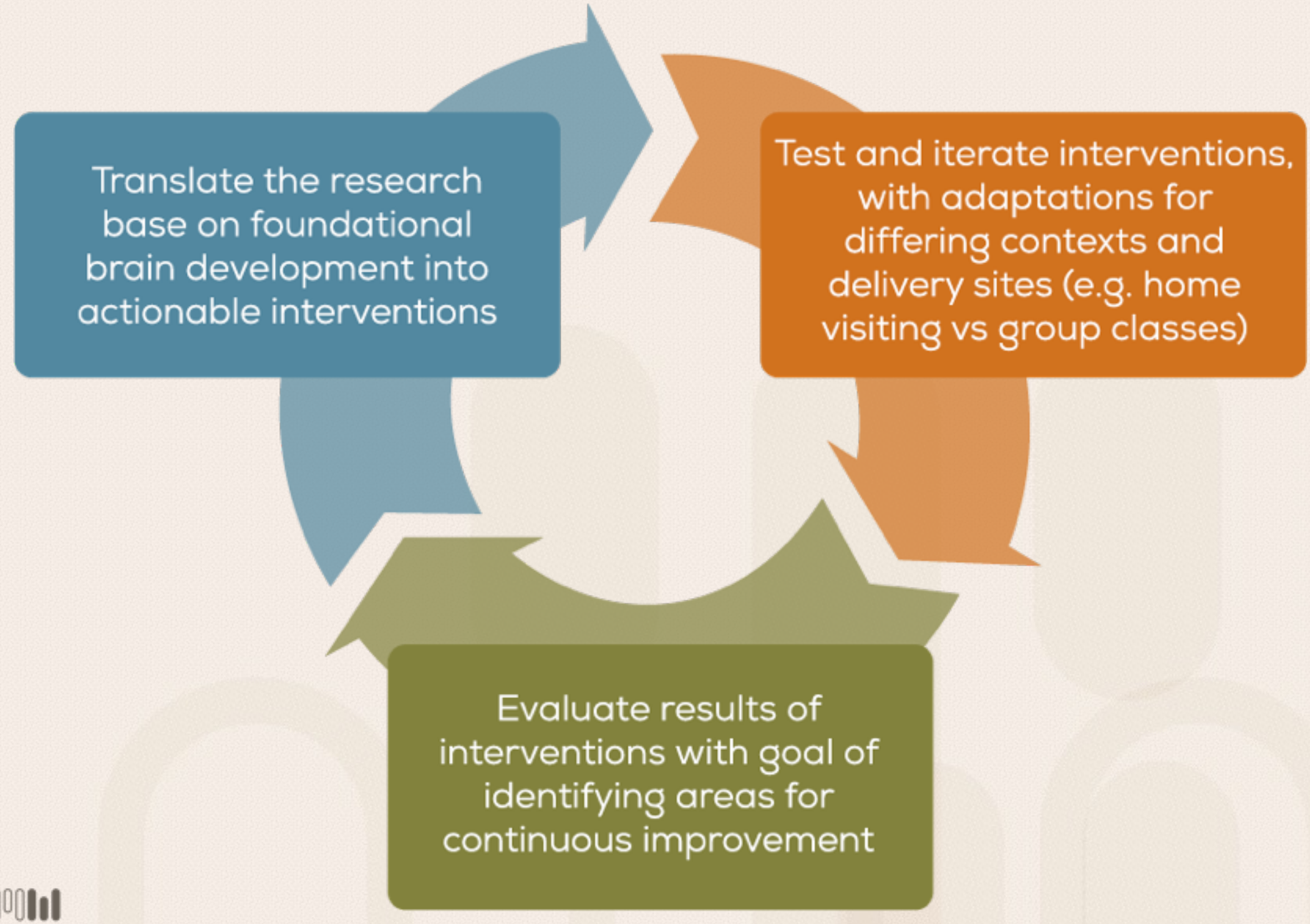



Center for Early Learning + Public Health

# TMW-Home Visiting: Spanish

- A cultural and linguistic adaptation of the TMW-HV program
- Addresses concerns vital to mono- and multilingual Spanish-speaking families
- RCT with 90 families

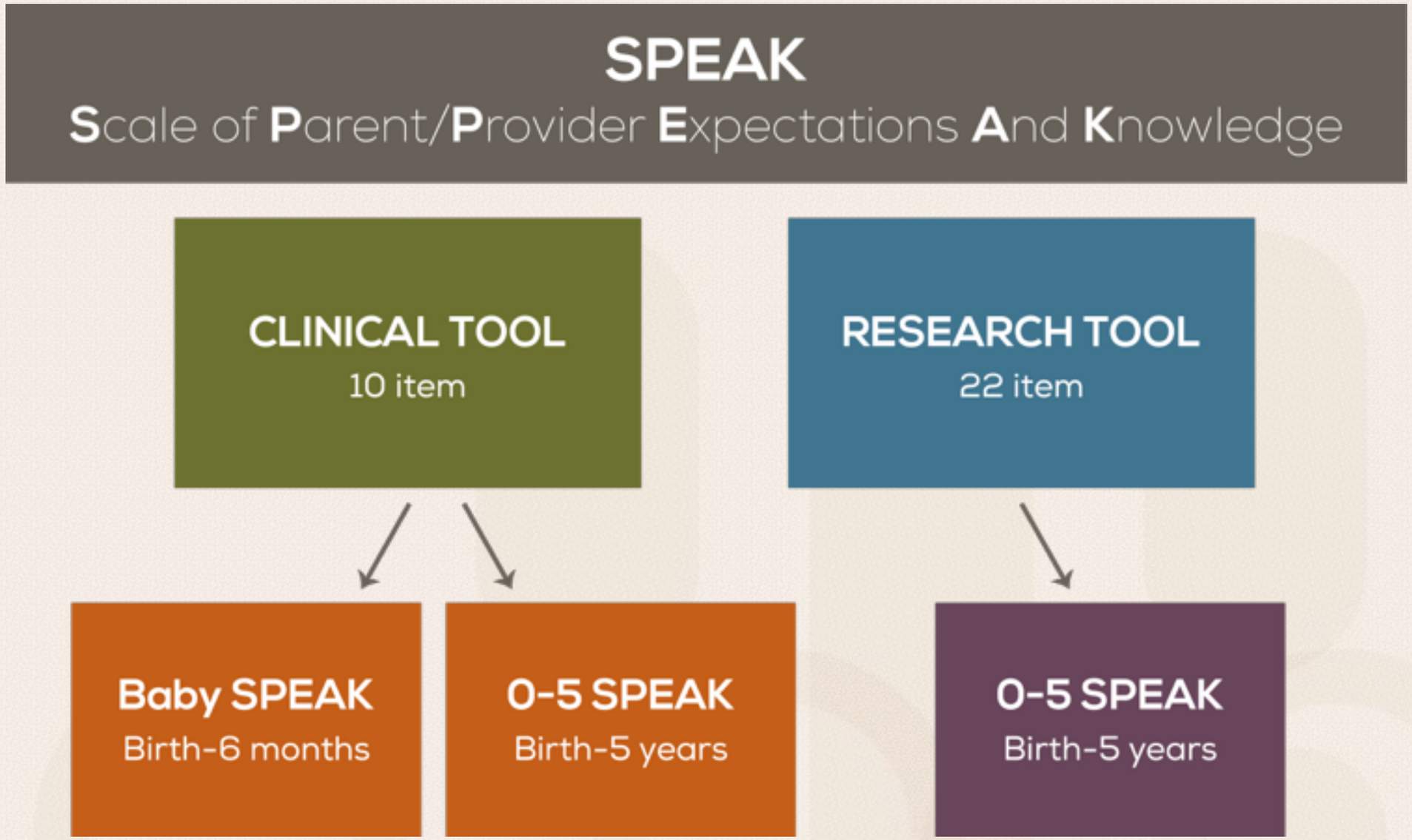
# Science as the Basis for Real Social Change




Center for Early Learning + Public Health

# SPEAK: Our Public Health Indicator

*"What gets measured, gets done"*




(Suskind et. al, 2017)

| Subdomains | Sample Item, Response Scale, and Correct Response |
|---|---|
| **Early Exposure** | When do you think a child is ready to be exposed to numbers and counting?<br>● As an infant (0 to 6 months) ○ As a toddler (1 to 3 years) ○ In preschool (3 to 5 years) ○ In Kindergarten (5 to 6 years) ○ In elementary school (6 years and up) |
| **Bilingualism** | When toddlers learn multiple languages at home, it will slow down their learning in all other subjects at school.<br>○ Definitely True ○ Probably True ○ Probably Not True ● Definitely Not True |
| **Media Use for Child Learning** | Children 0 to 2 years old can learn just as many words from educational TV as they can from their parents.<br>○ Definitely True ○ Probably True ○ Probably Not True ● Definitely Not True |
| **Nature vs. Nurture** | How smart a baby will become depends mostly on genetics.<br>○ Definitely True ○ Probably True ○ Probably Not True ● Definitely Not True |
| **Sensitivity and Responsiveness** | When infants babble, parents should respond as if the infant is saying real words.<br>● Definitely True ○ Probably True ○ Probably Not True ○ Definitely Not True |
| **Talking and Reading** | Answering only if a toddler uses words instead of just pointing better helps the toddler learn how to talk.<br>○ Definitely True ○ Probably True ○ Probably Not True ● Definitely Not True |

# TMW-Well Baby Initiative

Bilingual, video-based intervention built into pediatric visit at 1, 2, 4, & 6 months

Integrates into existing infrastructure to reach parents from the start

RCT with 450 families

Center for Early Learning + Public Health

# Participant Demographics

| | English | | Spanish | |
|---|---|---|---|---|
| Group | TMW-Well Baby (N = 125) | Control (N = 125) | TMW-Well Baby (N = 112) | Control (N = 107) |
| Age (*M, SD*) | 25.35 yr (5.39) | 24.46 yr (4.78) | 28.89 yr (6.01) | 27.57 yr (6.12) |
| Non-Hispanic, African American | 103 (82%) | 99 (79%) | 2 (2%) | 0 (0%) |
| Hispanic, any race | 15 (12%) | 21 (17%) | 109 (97%) | 104 (97%) |
| Married | 9 (7%) | 10 (8%) | 43 (38%) | 45 (42%) |
| Living with partner | 18 (14%) | 27 (22%) | 36 (32%) | 37 (35%) |
| Single | 94 (75%) | 86 (69%) | 26 (23%) | 24 (22%) |
| HS/GED or some college | 92 (74%) | 79 (63%) | 60 (54%) | 55 (51%) |
| Employed | 36 (29%) | 49 (39%) | 31 (28%) | 28 (26%) |
| Family Size (M, SD) | 4.30 (1.50) | 4.13 (1.50) | 4.50 (1.42) | 4.88 (1.34) |
| Link/WIC | 108 (86%) | 107 (86%) | 85 (76%) | 78 (73%) |

# Adverse Life Events in the First 6 Months

- 26% English-speaking and 27% Spanish-speaking experienced at least 1 event
    - Have you or a family member been the victim of a violent crime?
    - Has your child been a witness to a violent crime, domestic violence or abuse?
    - Have you or a family member had significant depression, mental illness, or attempted suicide?
    - Have you or a family member been jailed or in prison?
    - Has your child lived with someone who had a problem with alcohol or used drugs?

# Support for Childcare

***Who will care for your child the majority of the time?***

| | 1-Month WC Visit | | | | 6-Month WC Visit | | | |
|---|---|---|---|---|---|---|---|---|
| | English | | Spanish | | English | | Spanish | |
| **Myself** | 199 | 94.3% | 190 | 86.8% | 178 | 91.3 | 149 | 89.2 |
| **Child's Other Parent** | 8 | 3.8% | 6 | 2.7% | 6 | 3.1 | 4 | 2.4 |
| **Other Family Member** | 2 | 0.9% | 0 | 0.0% | 7 | 3.6 | 3 | 1.8 |
| **Home Daycare/ Daycare Center** | 2 | 0.9% | 4 | 1.8% | 4 | 2.1 | 11 | 6.6 |

# Well Baby Study Overview

| Pre-intervention Assessments | Intervention | Intervention | Intervention | Intervention / Post-intervention Assessments | Post-intervention Assessments | Post-intervention Assessments | Post-intervention Assessments | Post-intervention Assessments | Post-intervention Assessments |
|---|---|---|---|---|---|---|---|---|---|
| Completed in clinic<br>• Demographics<br>• Contact Info<br>• SPEAK<br>• TOPSE<br>• FLE | Completes ONE in clinic<br>• Module 1 of TMW-WB curriculum<br>• Safety video<br>• No video | Completes ONE in clinic<br>• Module 2 of TMW-WB curriculum<br>• Safety video<br>• No video | Completes ONE in clinic<br>• Module 3 of TMW-WB curriculum<br>• Safety video<br>• No video | Completes ONE in clinic<br>• Module 4 of TMW-WB curriculum<br>• Safety video<br>• No video | E-mailed at home<br>• SPEAK<br>• TOPSE | Completed in clinic<br>• NCAST<br>• CDI-Level I | Completed in clinic<br>• SPEAK<br>• TOPSE<br>• FLE<br>• TOI<br>• NCAST<br>• CDI-Level I<br>• Exit Survey | Completed in clinic<br>• SPEAK<br>• TOPSE<br>• FLE<br>• TOI<br>• NCAST<br>• CDI-Level II | Completed in clinic<br>• SPEAK-R<br>• FLE<br>• TOI<br>• SDoH<br>• NCAST<br>• CDI-Level II<br>• Book Share<br>• CCT |
| | Completed in clinic<br>• Post-visit Survey | Completed in clinic<br>• Post-visit Survey | Completed in clinic<br>• Post-visit Survey | Completed in clinic<br>• Post-visit Survey<br>• SPEAK<br>• FLE<br>• NCAST<br>• WJ-IV | | | | | |
| Newborn/1 week<br>$10 | 1 month<br>$20 | 2 months<br>$20 | 4 months<br>$20 | 6 months<br>$40 | 7 months<br>$10 gift-card | 9 months<br>$30 | 12 months<br>$50 | 18 months<br>$30 | 24 months<br>$50 |

Randomization

## Sample: Low-SES Caregivers

| TMW- WB | Control (safety video or usual care) |
|---|---|
| N = 225 | N = 225 |

Center for Early Learning + Public Health

# Knowledge (Baby SPEAK 10-item) by Group over Time among *English-Speaking* Parent

## ANCOVA

**Controlling for Education Level**

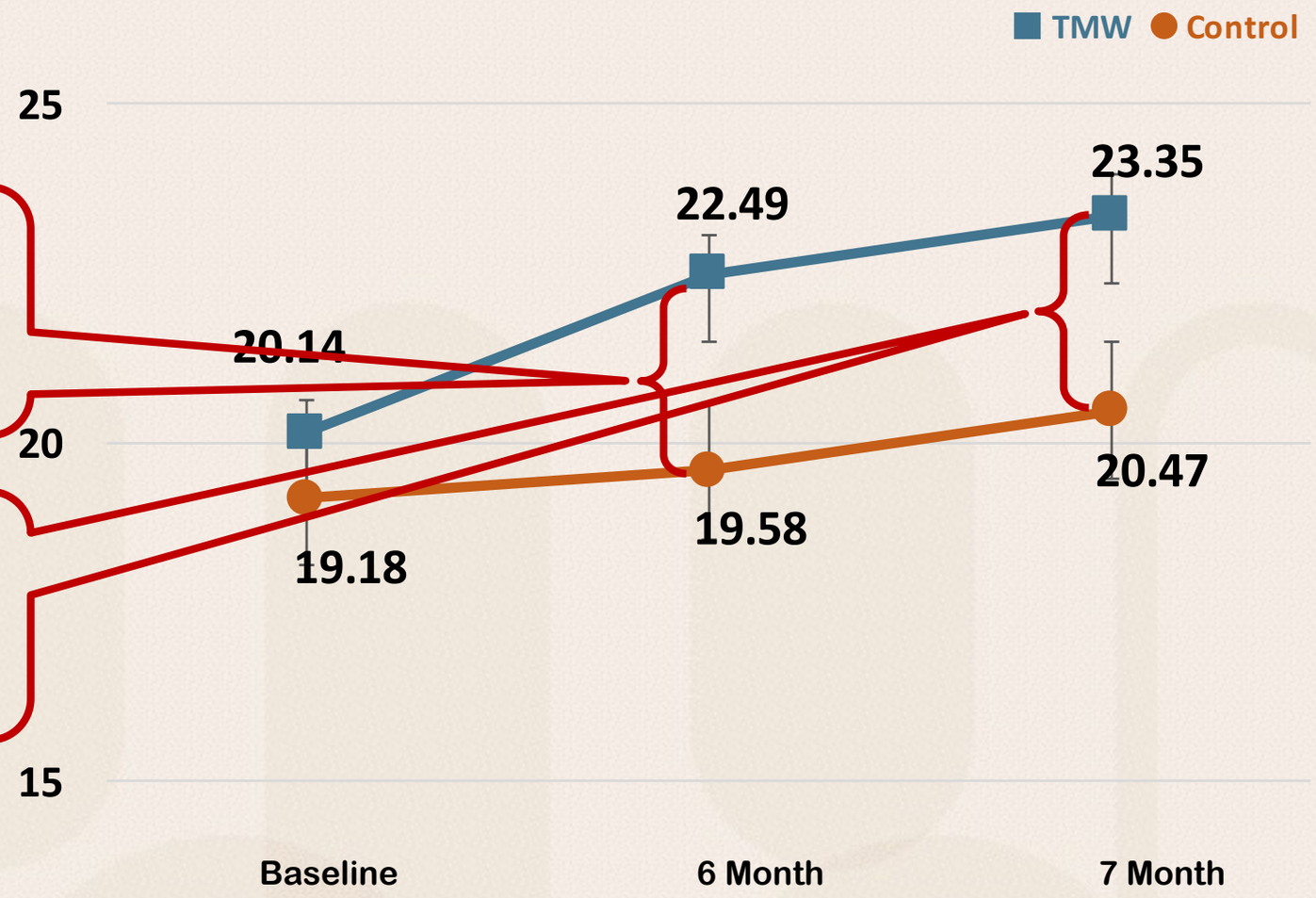
**TMW > Control (6-month post)**

$F(1, 200) = 13.80^{***}$, $\eta^2 = 0.07$

**TMW > Control (7-month post)**

$F(1, 151) = 11.13^{**}$, $\eta^2 = 0.07$

$^{**}p < .01$. $^{***}p < .001$




Center for Early Learning + Public Health

# Knowledge (Baby SPEAK 10-item) by Group over Time among *Spanish-Speaking* Parents

## ANCOVA

**Controlling for Education Level**

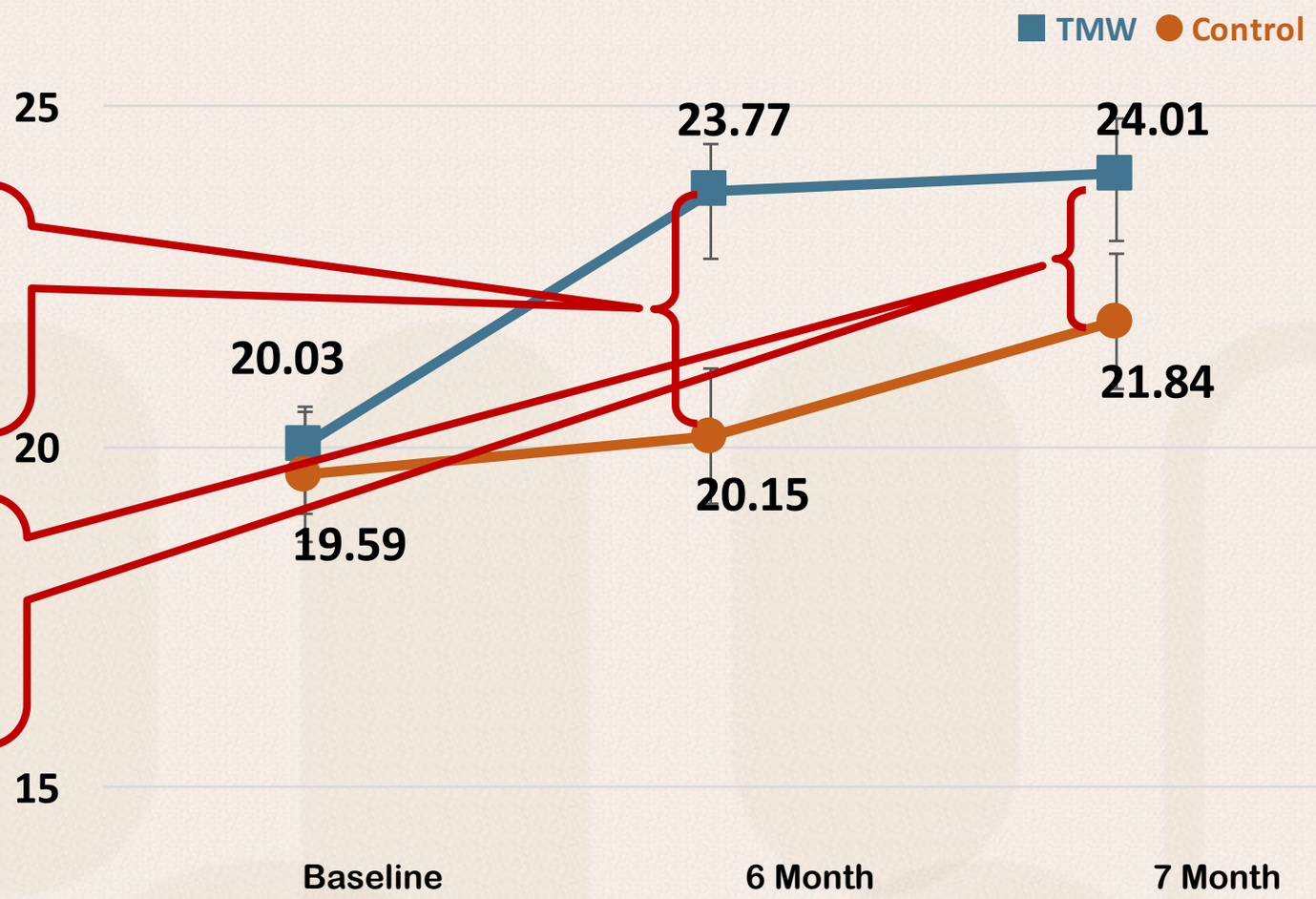
**TMW > Control (6-month post)**

$F\ (1,\ 148) = 16.79^{***},\ \eta^2 = 0.10$

**TMW > Control (7-month post)**

$F\ (1,\ 147) = 7.06^{**},\ \eta^2 = 0.05$

$^{**}p < .01.\ ^{***}p < .001$




Center for Early Learning + Public Health

# NCAST

## Nursing Child Assessment Satellite Training

- Assessing behaviors of the parent and the child during a teaching task
- 13 items focusing on maternal behaviors that are explicitly discussed in the Well Baby module videos

Center for Early Learning + Public Health

Goodson, Layzer, St.Pierre, Berstein, & Lopez, 2000

# Maternal Linguistic Behavior Scale

**ANOVA on all 13 items**

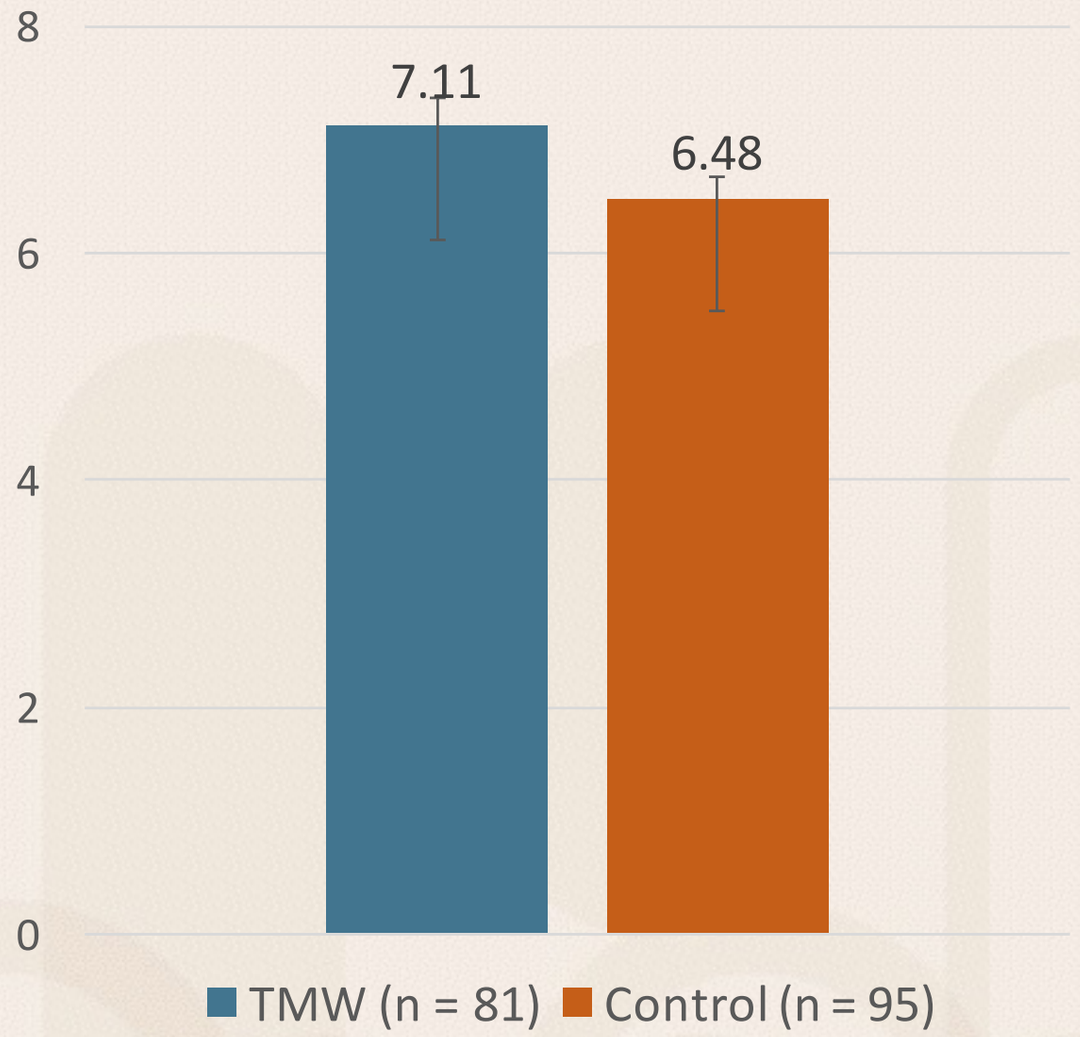
**TMW > Control (6-month post)**

$F(1, 174) = 3.87^{*}$, $\eta^2 = 0.02$

$^{*}p = .05$.

## Sample Items

- Caregiver praises child's successes or partial successes
- Caregiver makes a positive, sympathetic, or soothing verbalization



# Maternal Linguistic Behaviors: Praise & Encouragement

**ANOVA on 7 items**

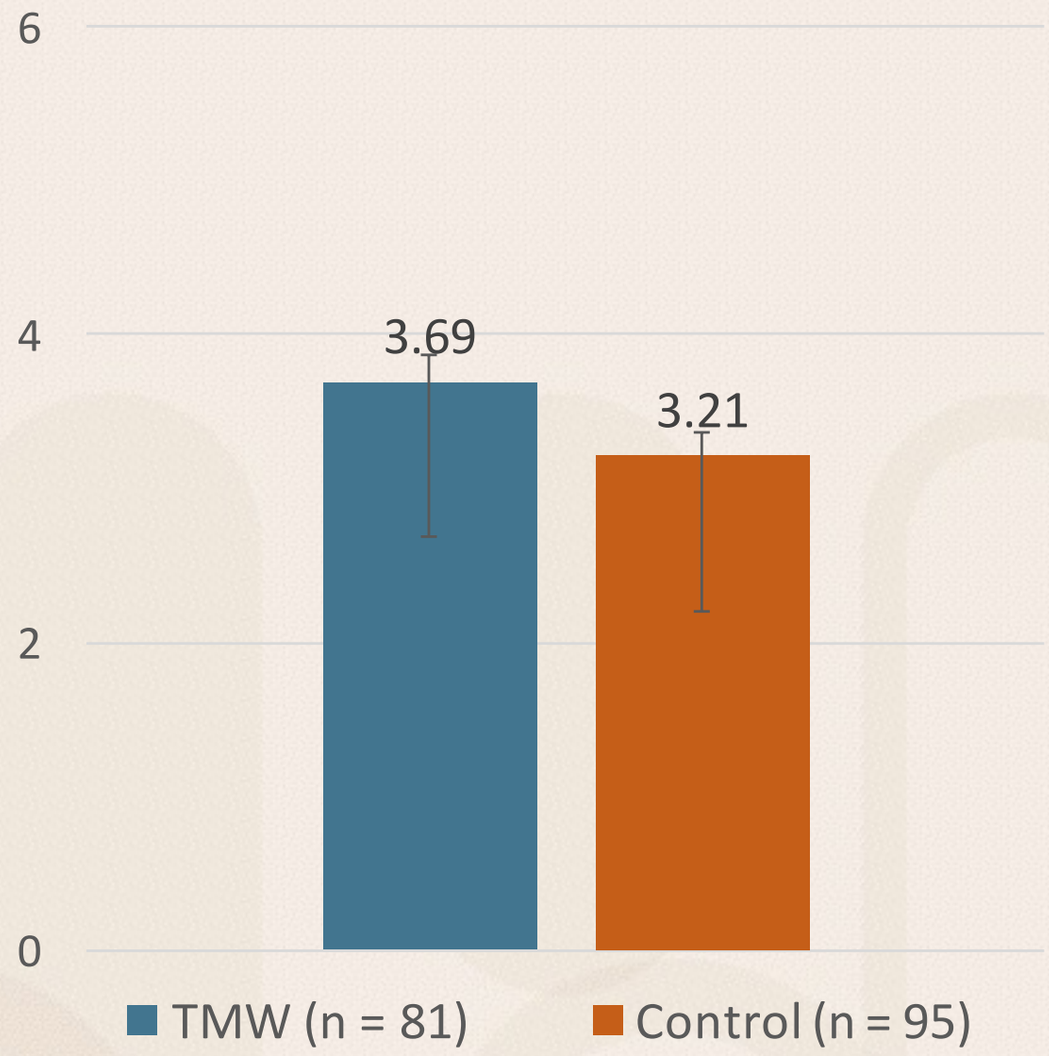
**TMW > Control (6-month post)**

$F(1, 174) = 4.26^{*}, \eta^2 = 0.02$

$^{*}p < .05$.

## Sample Items

- Caregiver uses both verbal and non-verbal instruction in teaching the child
- Caregivers makes cheerleading type statements to the child during the teaching interaction



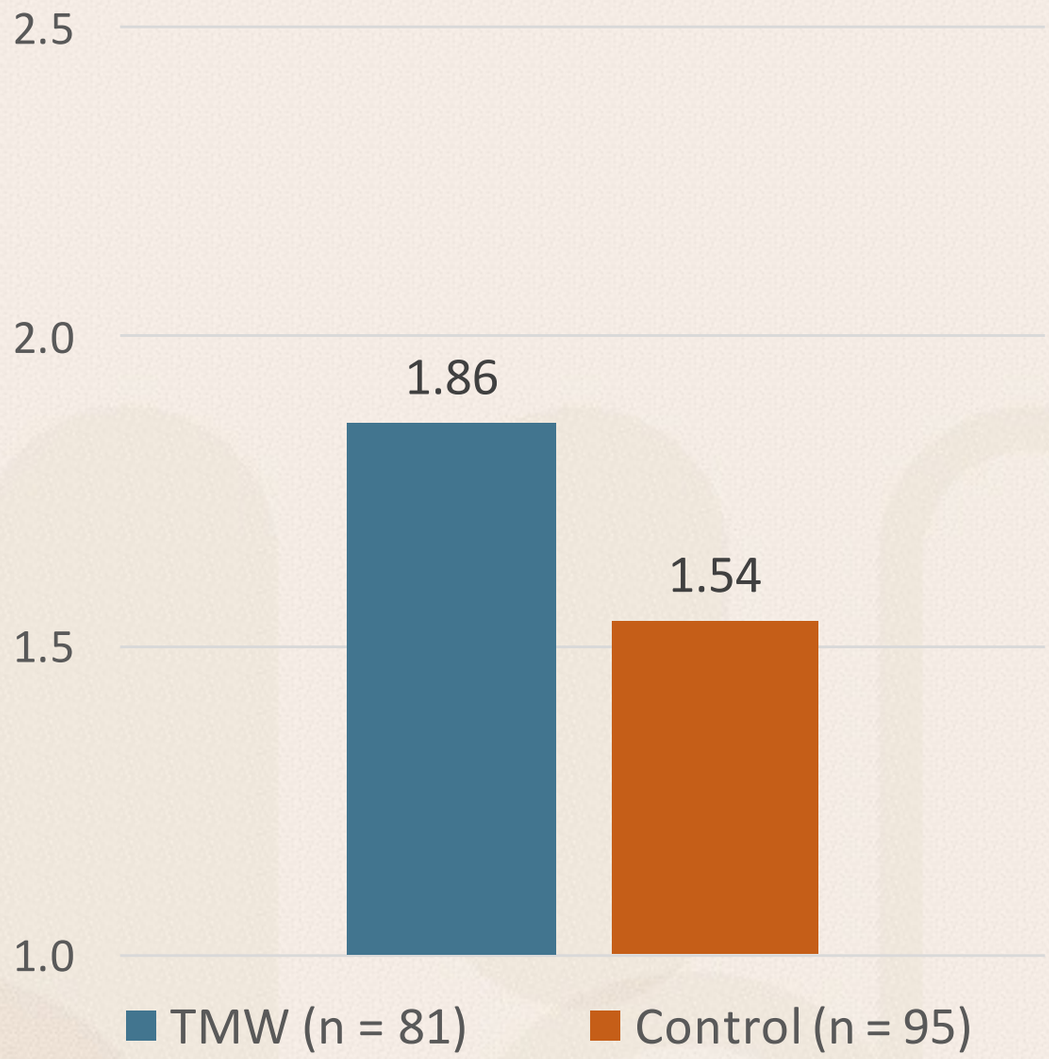
# Maternal Use of Complex Language

**ANOVA on 4 items**

**TMW > Control (6-month post)**

$F(1, 174) = 4.50^{*}, \eta^2 = 0.03$

$^{*}p < .05$.




## Sample Items

- Caregiver uses at least two different sentences or phrases to describe the task to the child
- Caregiver uses explanatory verbal style more than imperative style in teaching the child

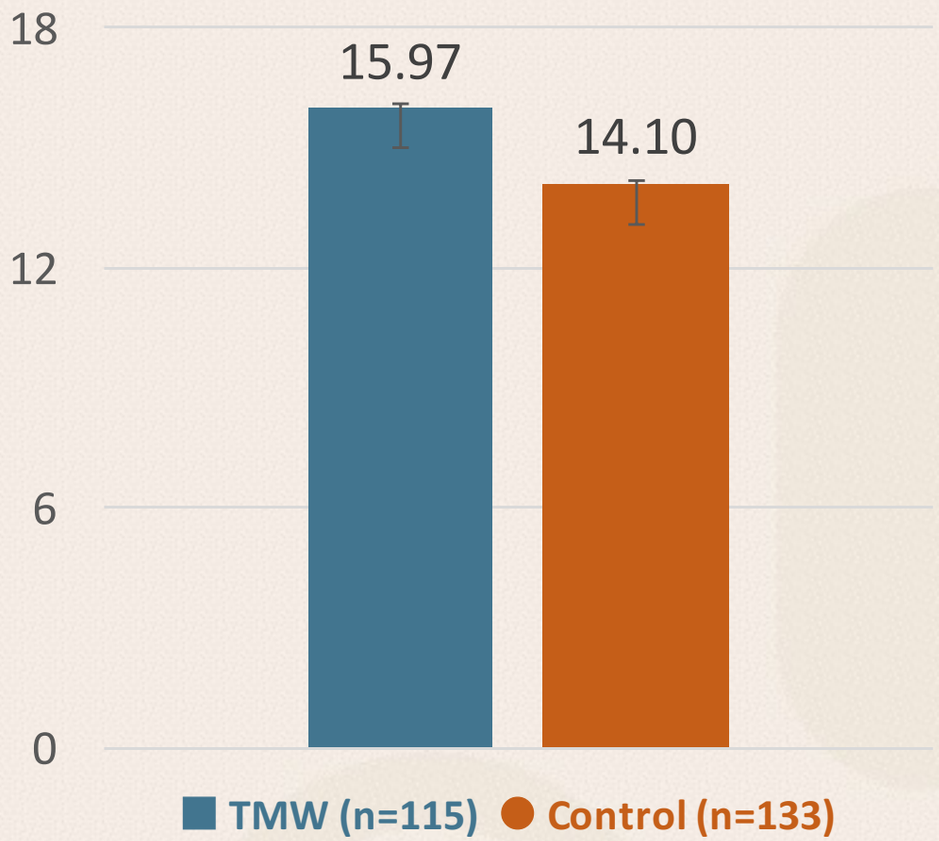
# MacArthur-Bates Communicative Development Inventories

- Caregiver-report of a child's language skills
  - either English or Spanish
- Receptive: being able to understand the words
- Expressive: being able to understand and say the words
- 9-Month and 12-Month Well-Baby visit

# *English* Language Skills (MacArthur-Bates) at 9-Month

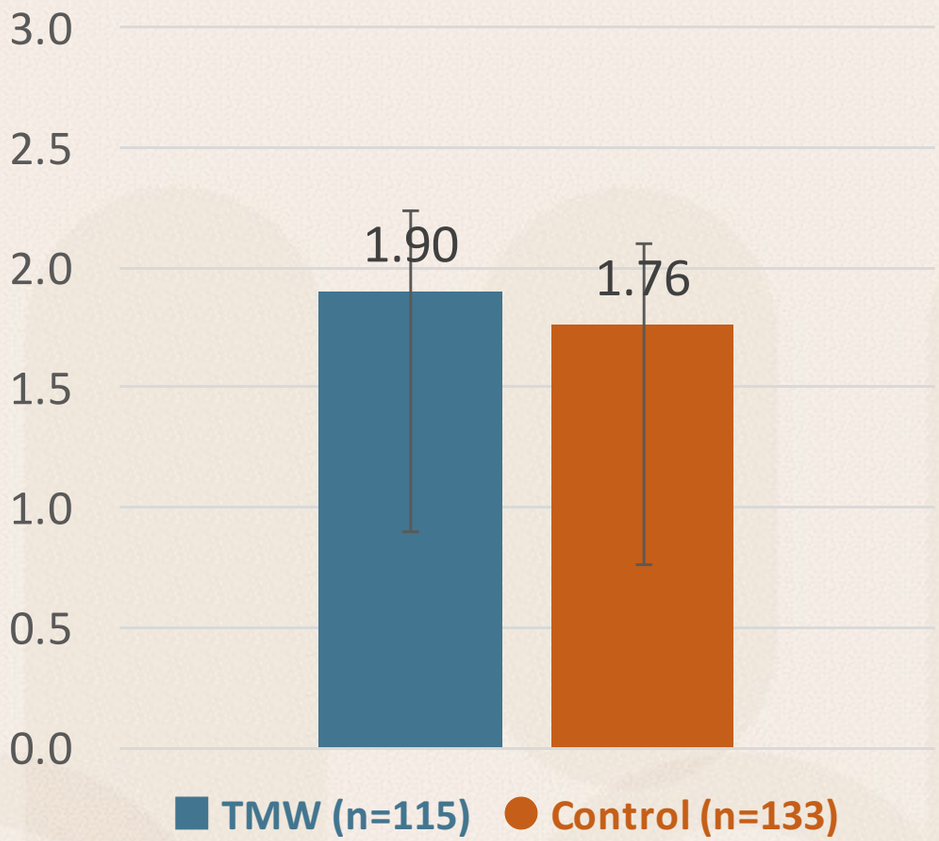
## T-Test: Receptive

**TMW ≈ Control** ***t*** **(246) = 1.12,** ***p*** **> .05**




## T-Test: Expressive

**TMW ≈ Control** ***t*** **(246) = 0.35,** ***p*** **> .05**

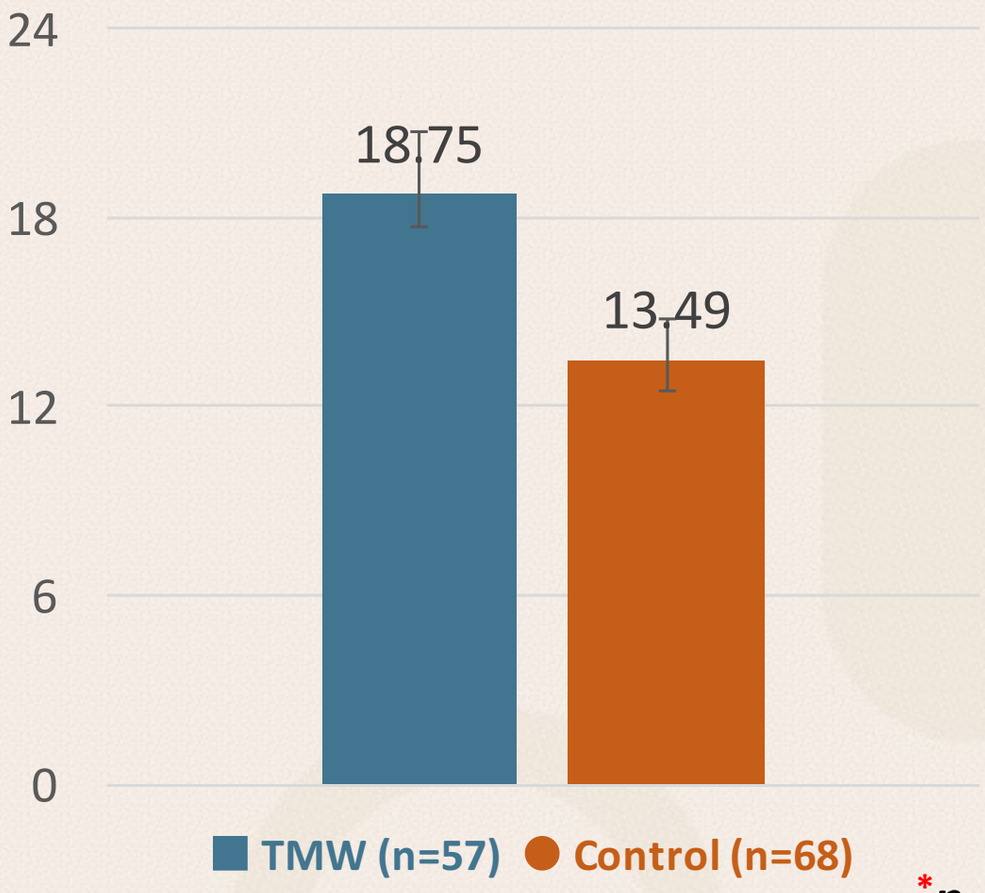



Center for Early Learning + Public Health

# *Spanish* Language Skills (MacArthur-Bates) at 9-Month

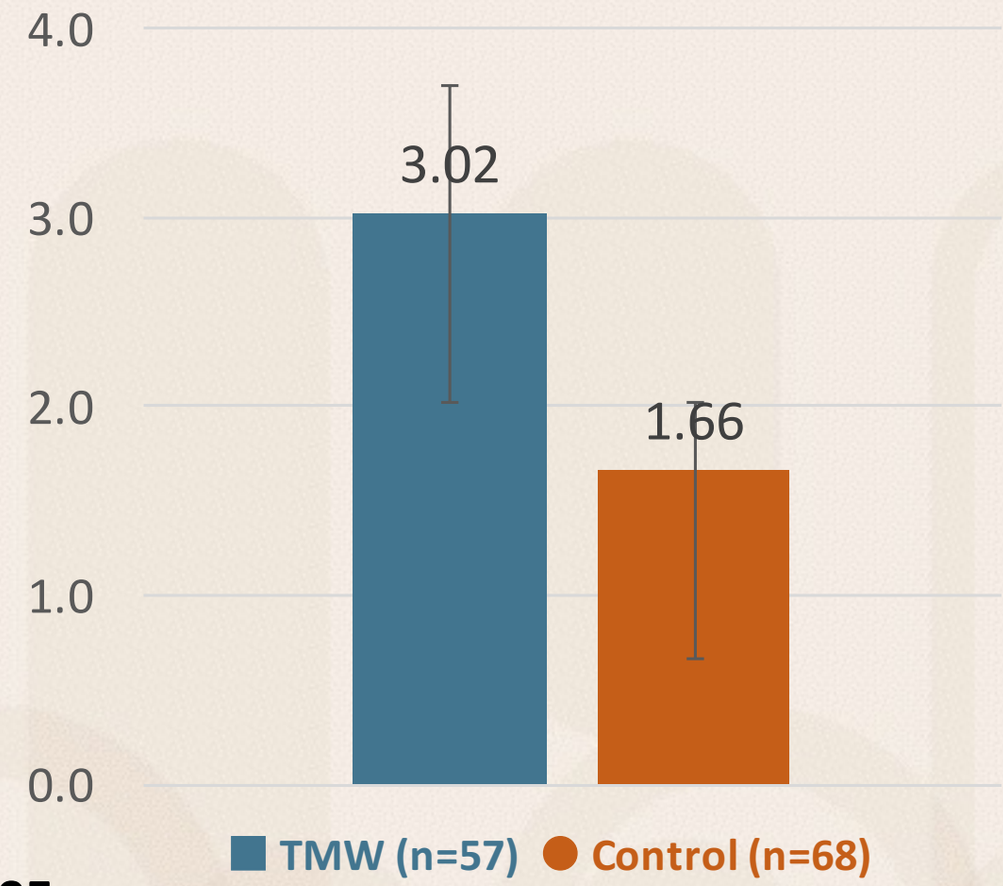
## T-Test: Receptive

**TMW > Control *t* (123) = 2.28***




## T-Test: Expressive

**TMW > Control *t* (123) = 1.84†**

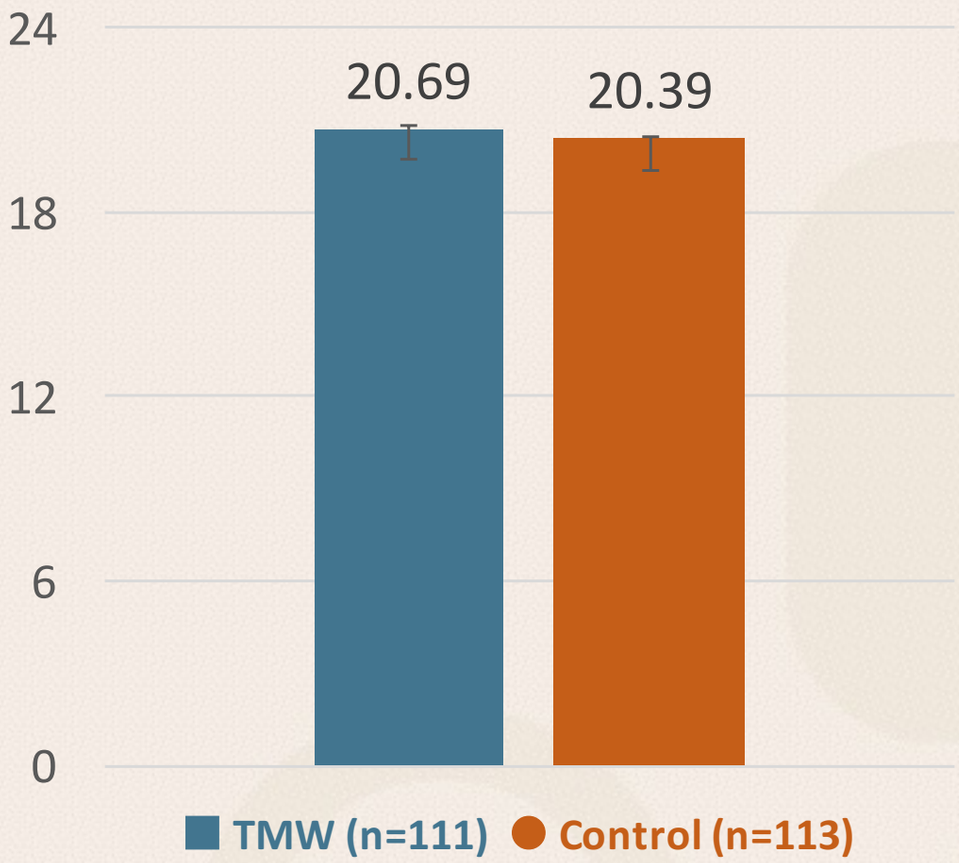



***p* < .05. †*p* < .05.

# *English* Language Skills (MacArthur-Bates) at 12-Month

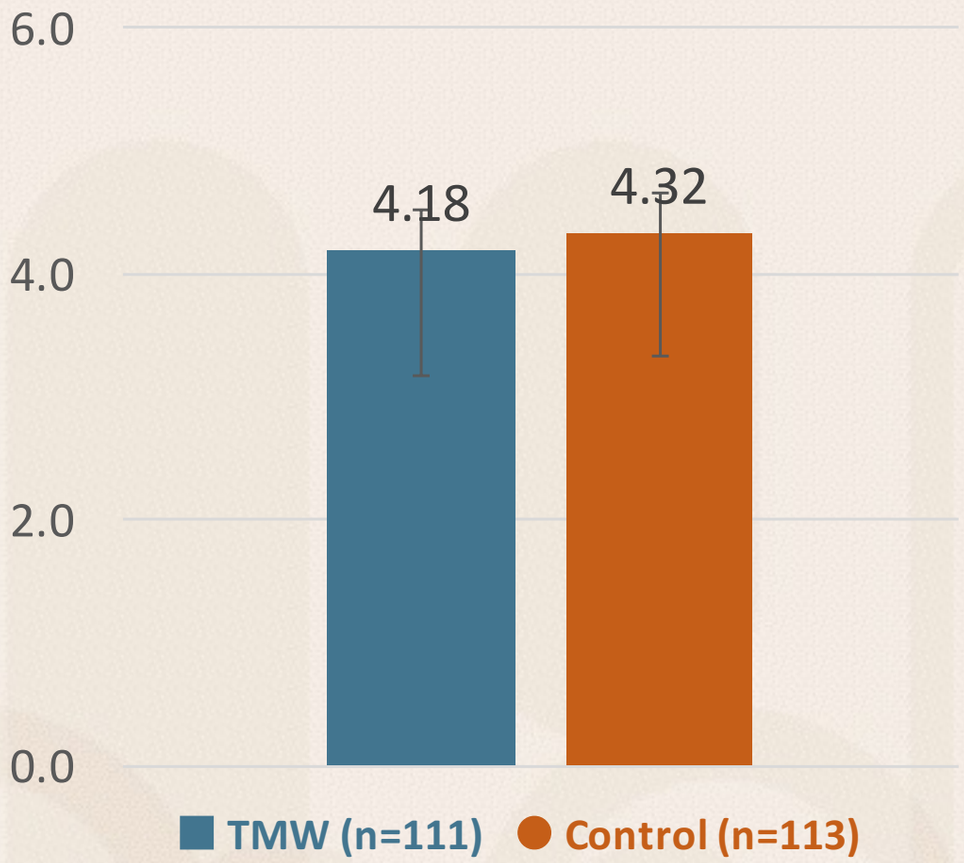
## T-Test: Receptive

**TMW ≈ Control** ***t*** **(222) = 0.14,** ***p*** **> .05**




## T-Test: Expressive

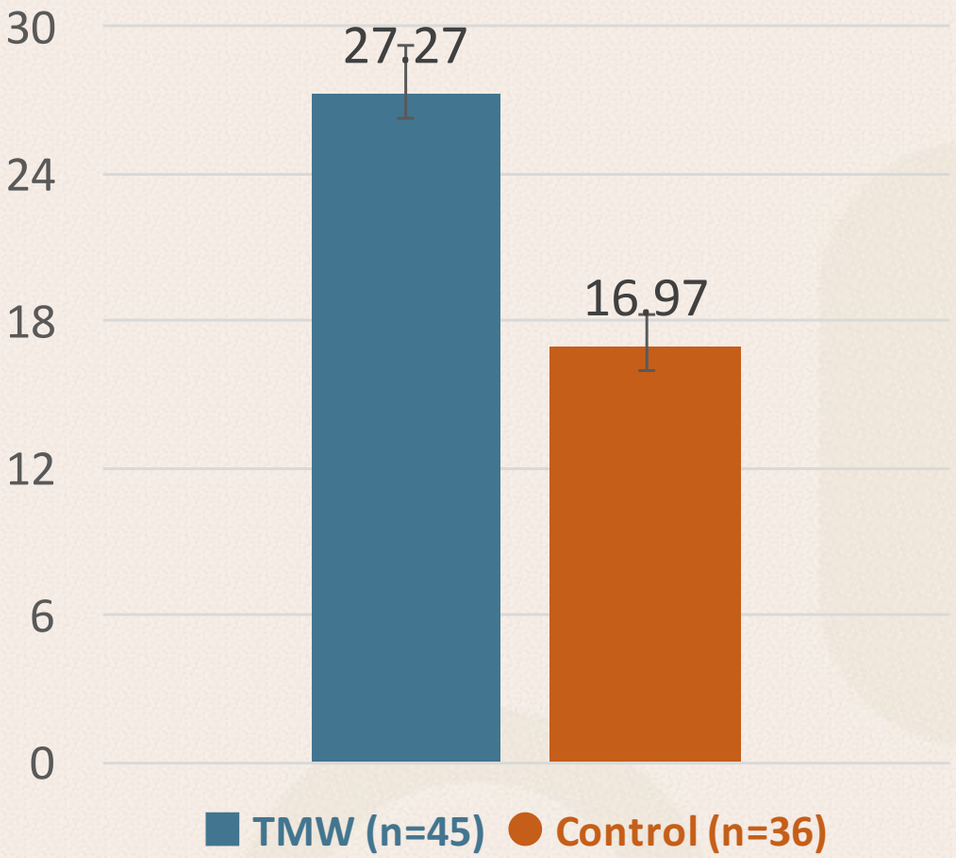
**TMW ≈ Control** ***t*** **(222) = -0.19,** ***p*** **> .05**



# *Spanish* Language Skills (MacArthur-Bates) at 12-Month

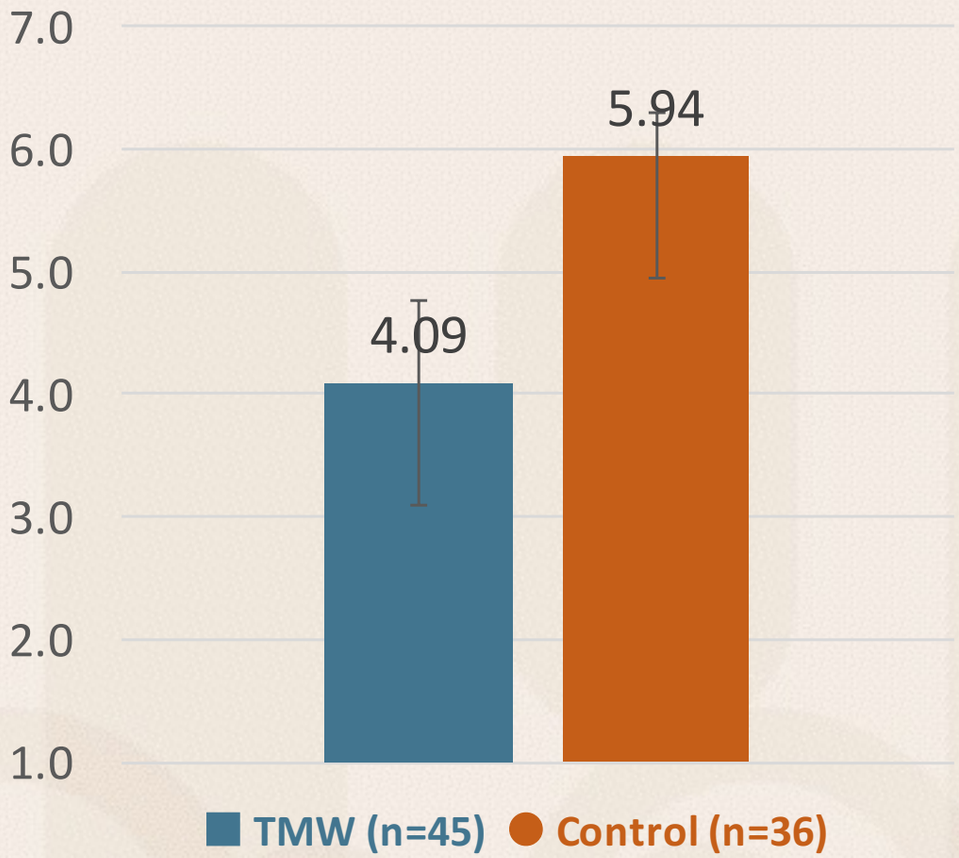
## T-Test: Receptive

**TMW > Control *t* (79) = 2.53***




## T-Test: Expressive

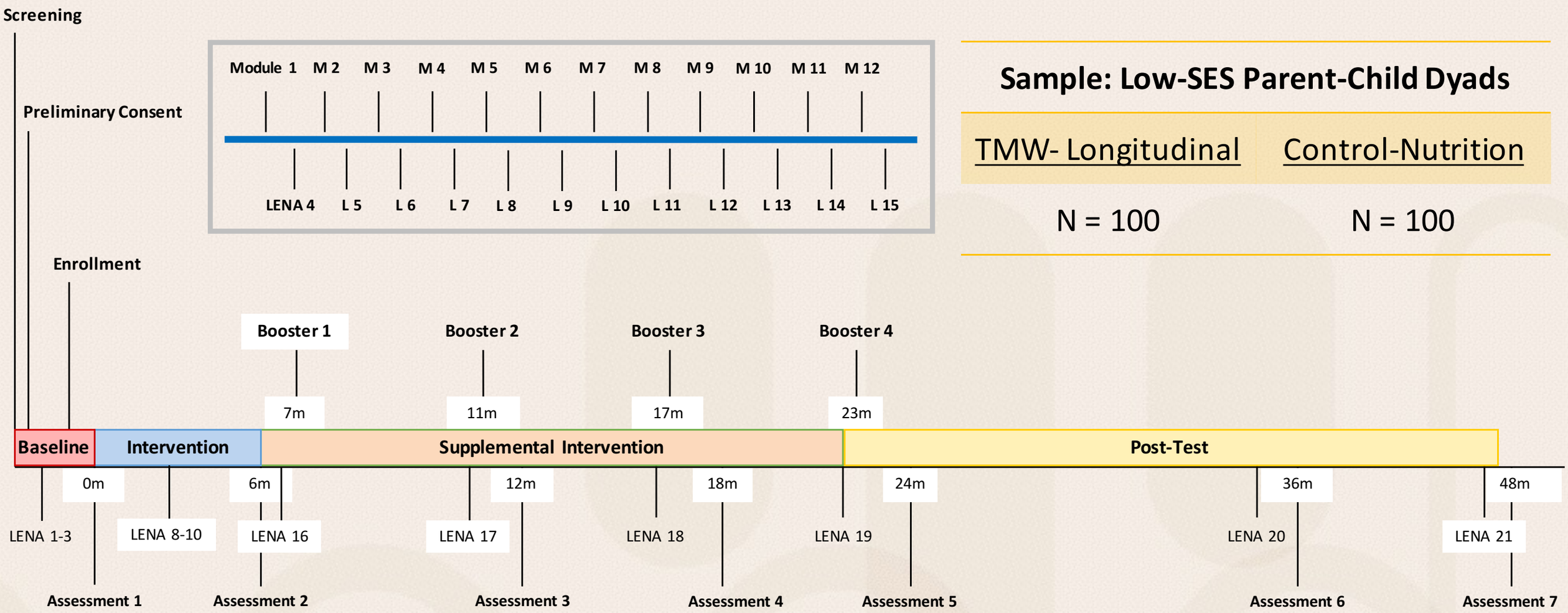
**TMW > Control *t* (79) = -1.51, *p* > .05**




***$p < .05$.**

# TMW Home Visiting

# TMW-Longitudinal Home Visiting Curriculum




**Sample: Low-SES Parent-Child Dyads**

| TMW- Longitudinal | Control-Nutrition |
|---|---|
| N = 100 | N = 100 |

Center for Early Learning + Public Health

# TMW Home-Visiting: A Longitudinal RCT

| Experimental: TMW | Control: Nutrition |
|---|---|
| N = 100 | N = 100 |
| 12 biweekly 60-min home visits | 12 biweekly 30-minute home visits |
| Four 30-minute boosters | Four 10-minute booster |

- All participants are at or below 200% the Federal Poverty Line
- Assesses children age 13-16 months to kindergarten entry

# Participant Demographics

| | TMW (n = 99) | Control (n = 95) |
|---|---|---|
| **Caregiver Characteristics** | | |
| Age (*M*, *SD*) | 29.41 yr (6.68) | 28.66 yr (7.06) |
| African American | 80% | 82% |
| Married or Civil Union | 16% | 16% |
| HS/GED or some college | 64% | 64% |
| Employed | 47% | 52% |
| WIC and/or LINK | 76% | 84% |
| **Child Characteristics** | | |
| Age (*M*, *SD*) | 1.18 yr (0.10) | 1.19 yr (0.11) |
| Male | 57% | 50% |

Center for Early Learning + Public Health

# **SPEAK** – **S**urvey **of** **P**arent/**P**rovider **E**xpectations **A**nd **K**nowledge

- Parents' knowledge and beliefs about young children's cognitive and language development

- Response scale: 0 (strongly agree) to 4 (strongly disagree)

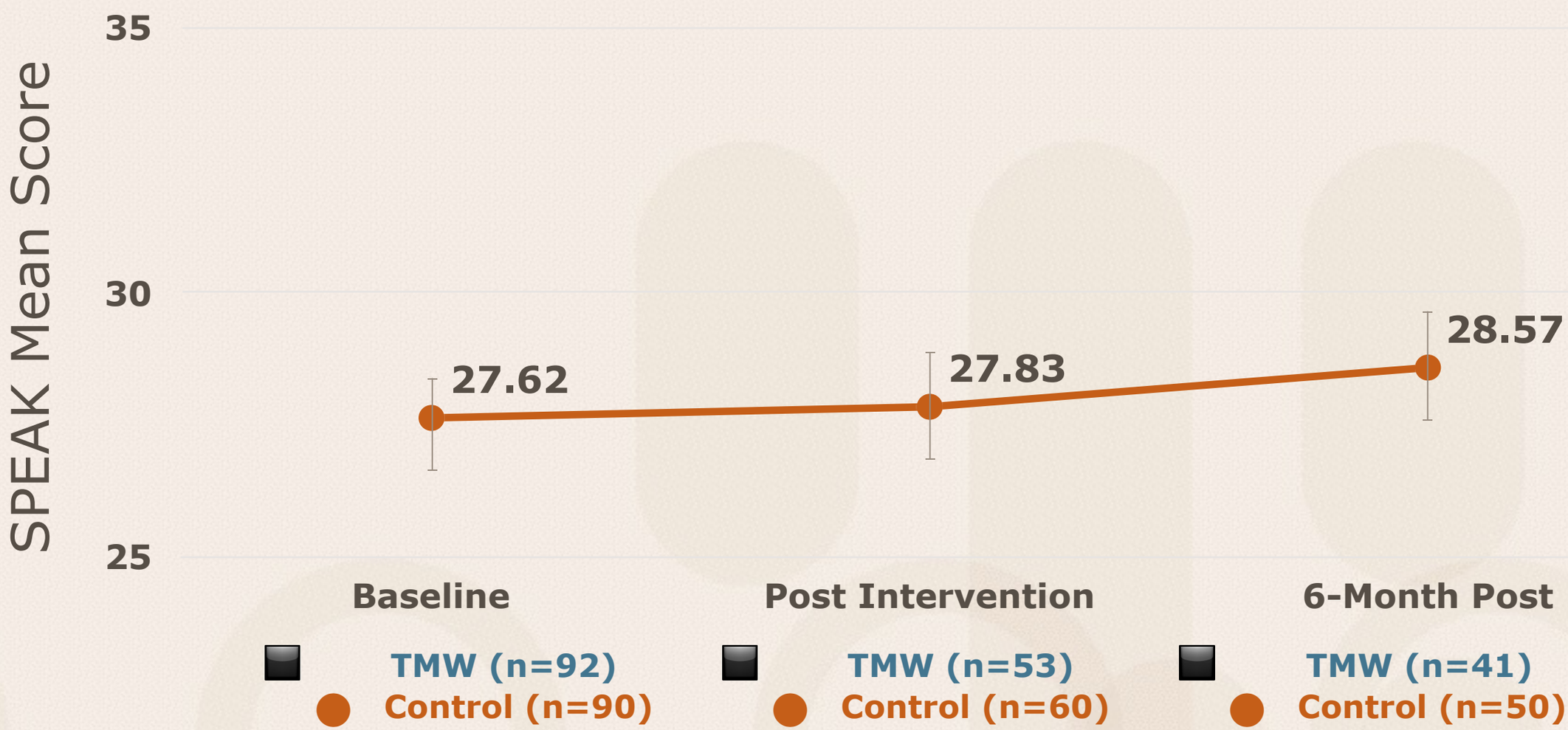
- Sample items:

*"Infants learn little about language in the first six months of their life."*

*"Responding to infants every time they cry will only end up spoiling them."*

Suskind, D. L., Leung, C. Y. Y., Webber, R. J., Hundertmark, A. C., Leffel, K. R., Suskinds, E., Hernandez, M. W., & Graf, E. (in press). Development of the Survey of Parent/Provider Expectations and Knowledge (SPEAK). First Language.

# Parent Knowledge (SPEAK) by Group over Time




Center for Early Learning + Public Health

# Parent Knowledge (SPEAK) by Group over Time

**ANCOVA**

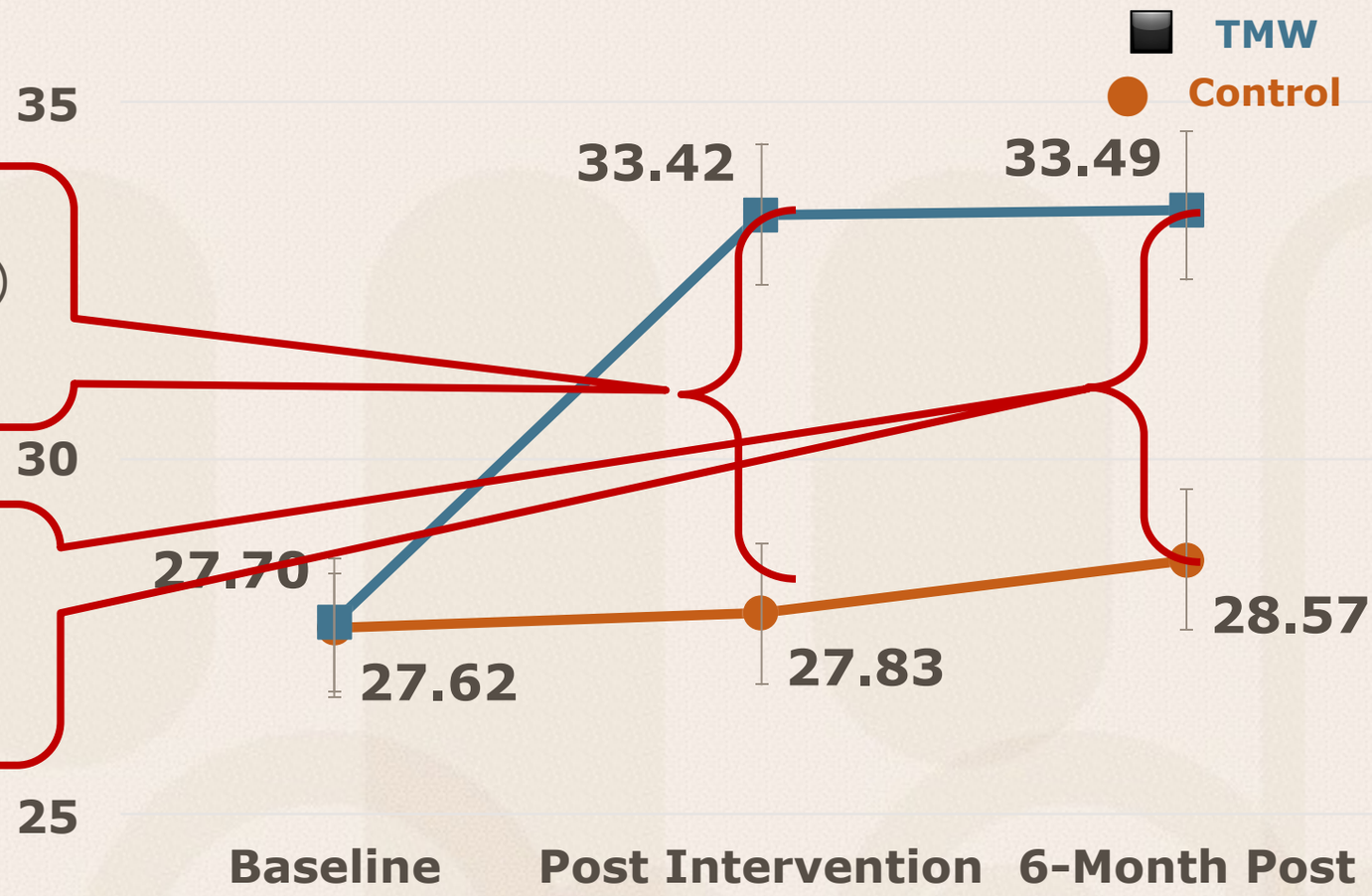
**controlling for Baseline Knowledge**

**TMW** > **Control** (post intervention)

$F$ (2, 110) = 24.86***, $\eta^2$ = 0.18

**TMW** > **Control** (6-month post)

$F$ (2, 88) = 21.00***, $\eta^2$ = 0.19




***$p$ < .001

Center for Early Learning + Public Health

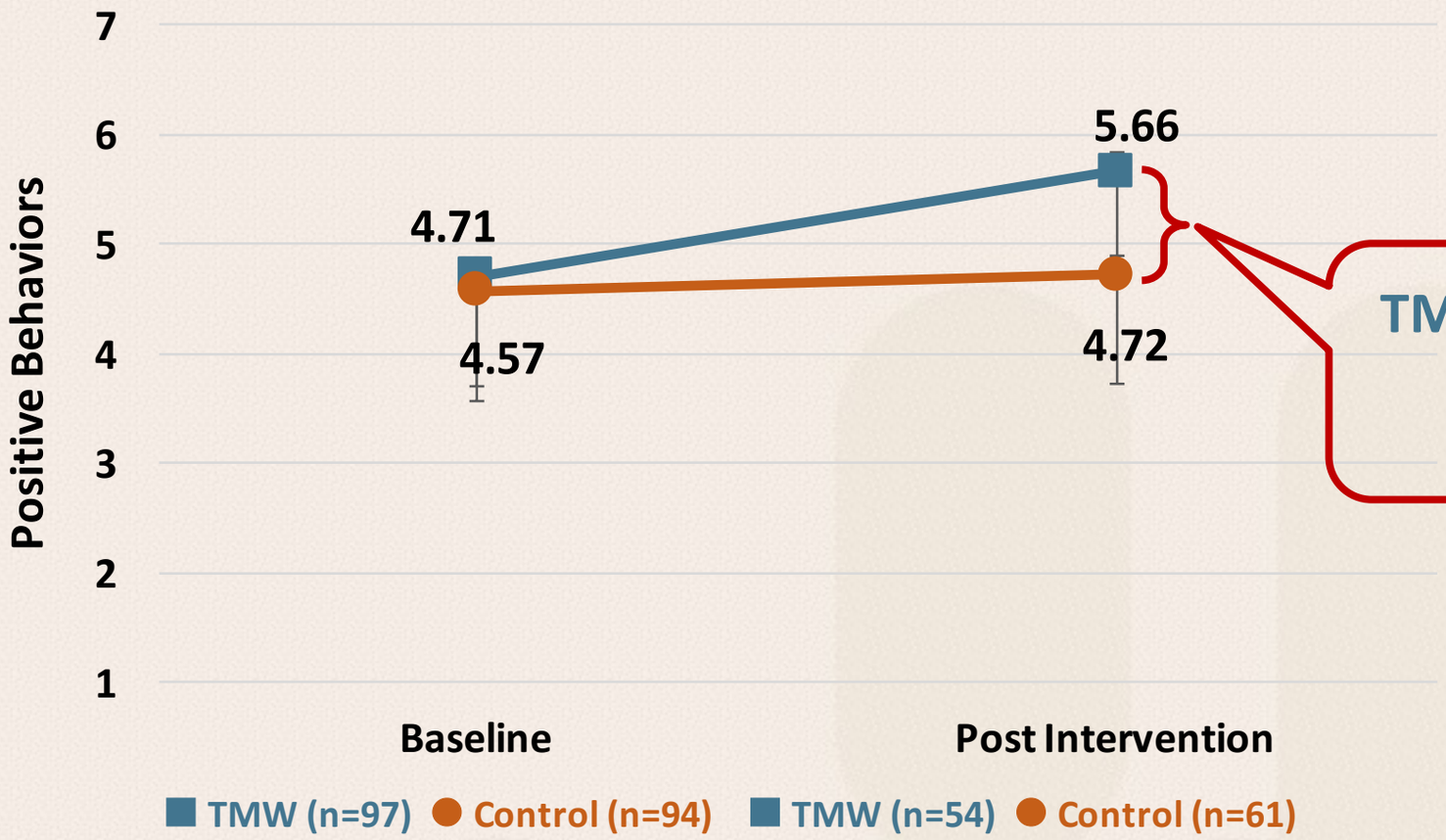
# Parent-Child Interaction System (PARCHISY)

- Caregiver behaviors towards child at free-play
- Positive Behaviors
  - Praise, Explanation, and Open-Ended Questions
- Negative Behaviors
  - Physical Control, Criticism, and Intrusiveness
- Rating : 1 *(none shown)* to 7 *(consistently shown/exclusive use)*

Center for Early Learning + Public Health

(Deater-Deckard, 2000; Deater-Deckard, Pylas, & Petrill, 1997)

# Positive Behaviors by Group over Time




**Mixed ANCOVA**

**controlling for education and receptive language skills**

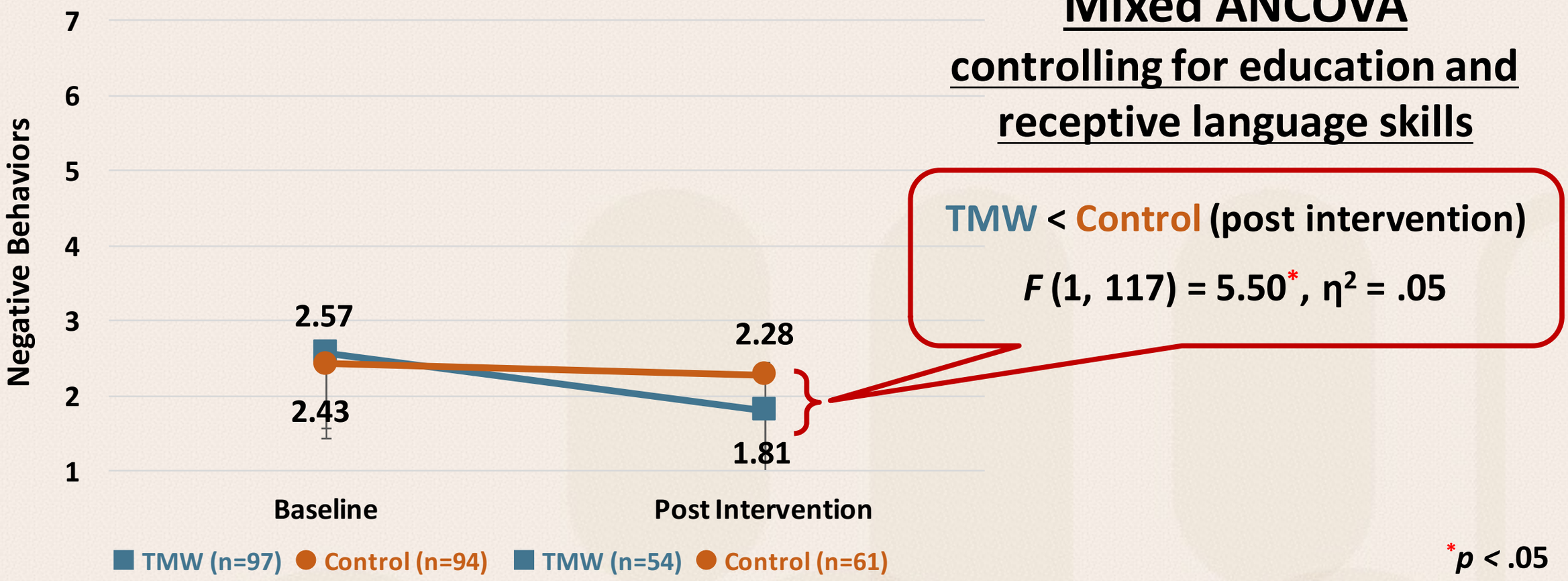
**TMW > Control (post intervention)**

$F(1, 117) = 9.39^{**}$, $\eta^2 = .07$

$^{**}p < .01$

Center for Early Learning + Public Health

# Negative Behaviors by Group over Time




**Mixed ANCOVA**

**controlling for education and receptive language skills**

**TMW < Control (post intervention)**

$F\,(1,\ 117) = 5.50^{*},\ \eta^2 = .05$

$^{*}p < .05$

Center for Early Learning + Public Health

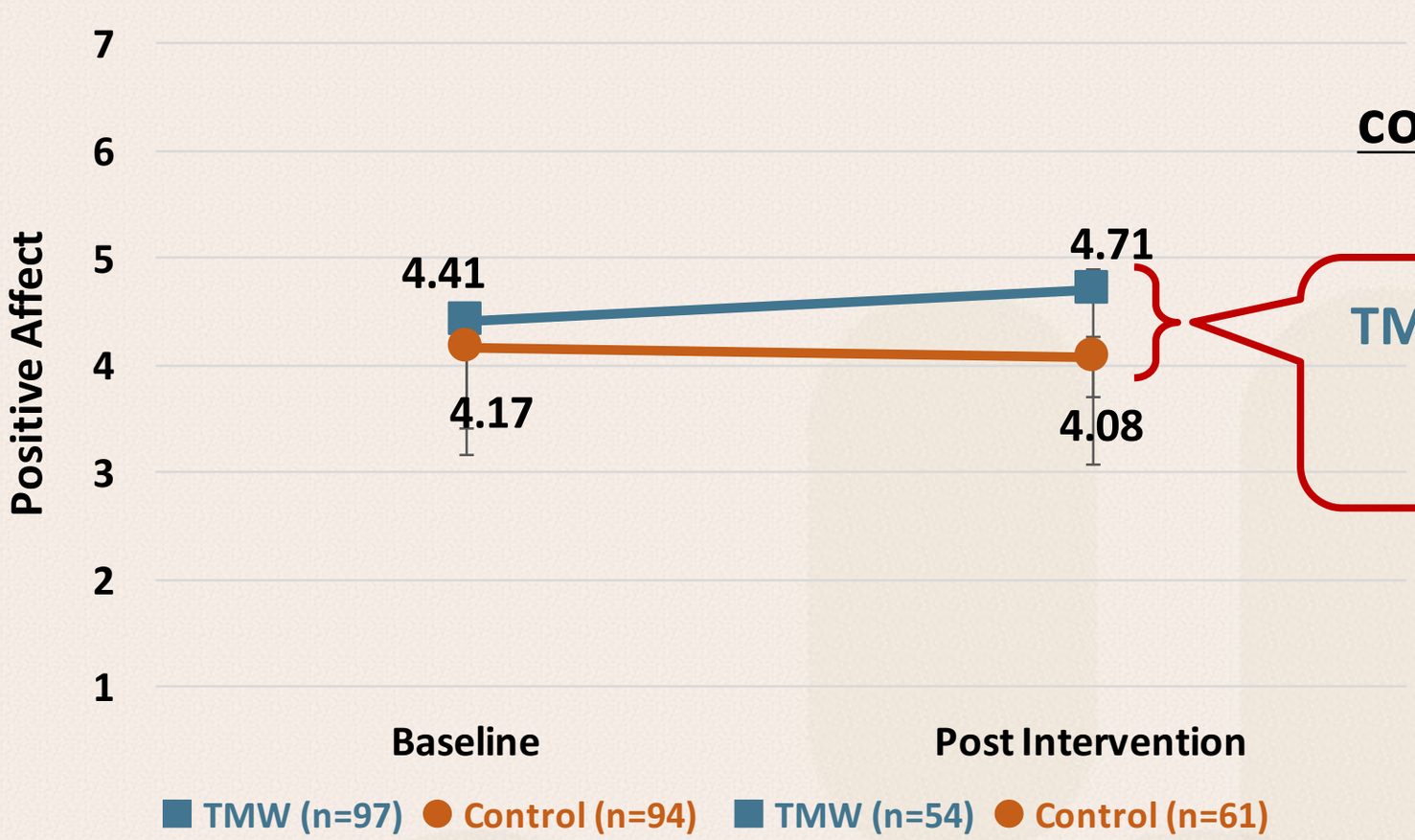
# Parent-Child Interaction System (PARCHISY)

- Parent affect towards child at free-play
- Positive Affect
  - Warmth, Smiling, and Laughing
- Negative Affect
  - Rejection, Frowning, and Cold or Harsh Tone
- Rating : 1 *(none shown)* to 7 *(consistently shown/exclusive use)*

Center for Early Learning + Public Health

(Deater-Deckard, 2000; Deater-Deckard, Pylas, & Petrill, 1997)

# Positive Affect by Group over Time




**Mixed ANCOVA**

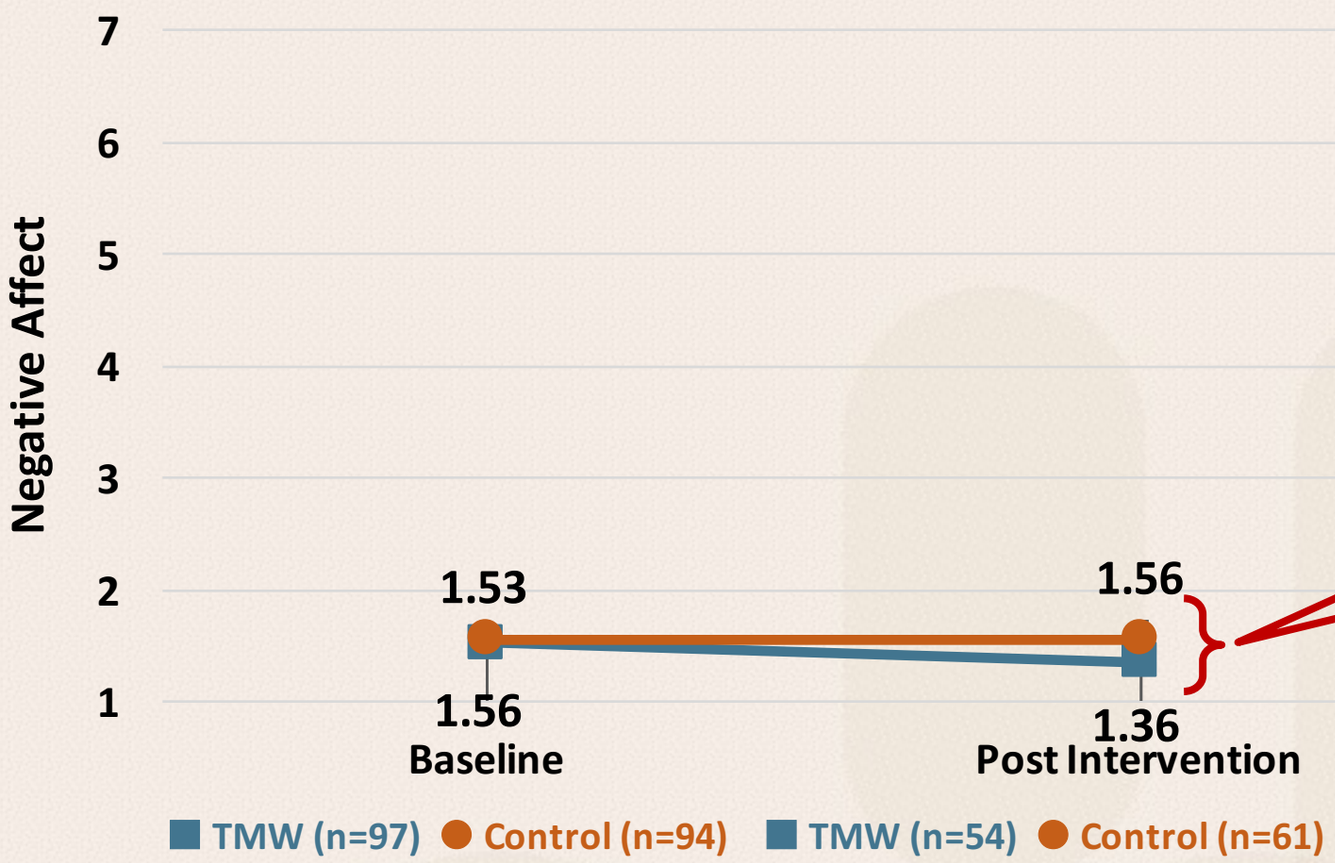
**controlling for education and receptive language skills**

**TMW > Control (post intervention)**

$F(2, 111) = 1.54$, $p = .22$

Center for Early Learning + Public Health

# Negative Affect by Group over Time




**Mixed ANCOVA**
**controlling for education and receptive language skills**

**Control > TMW (post intervention)**

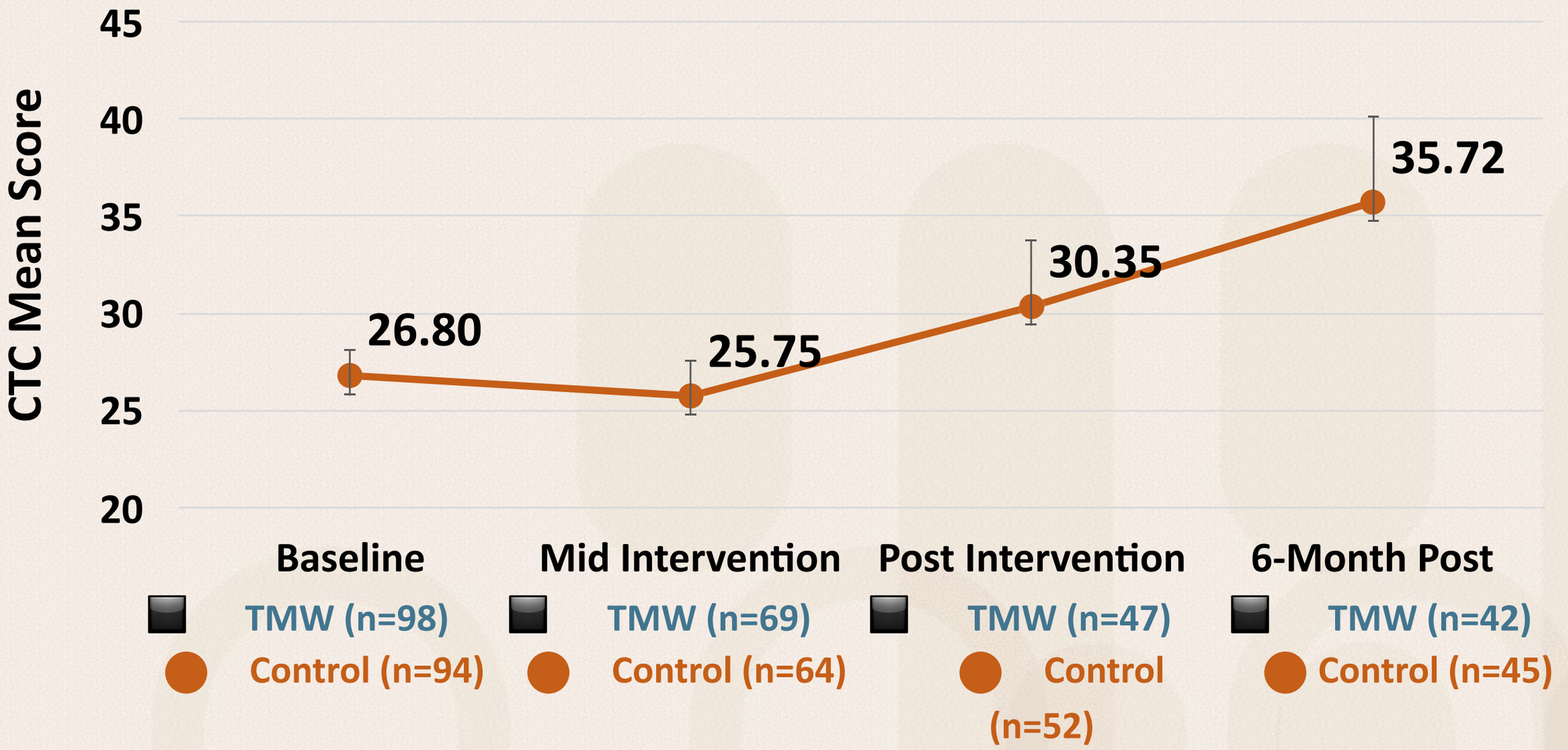
$F(1, 117) = 1.15, p = .29$

Center for Early Learning + Public Health

# Conversational Turn Count

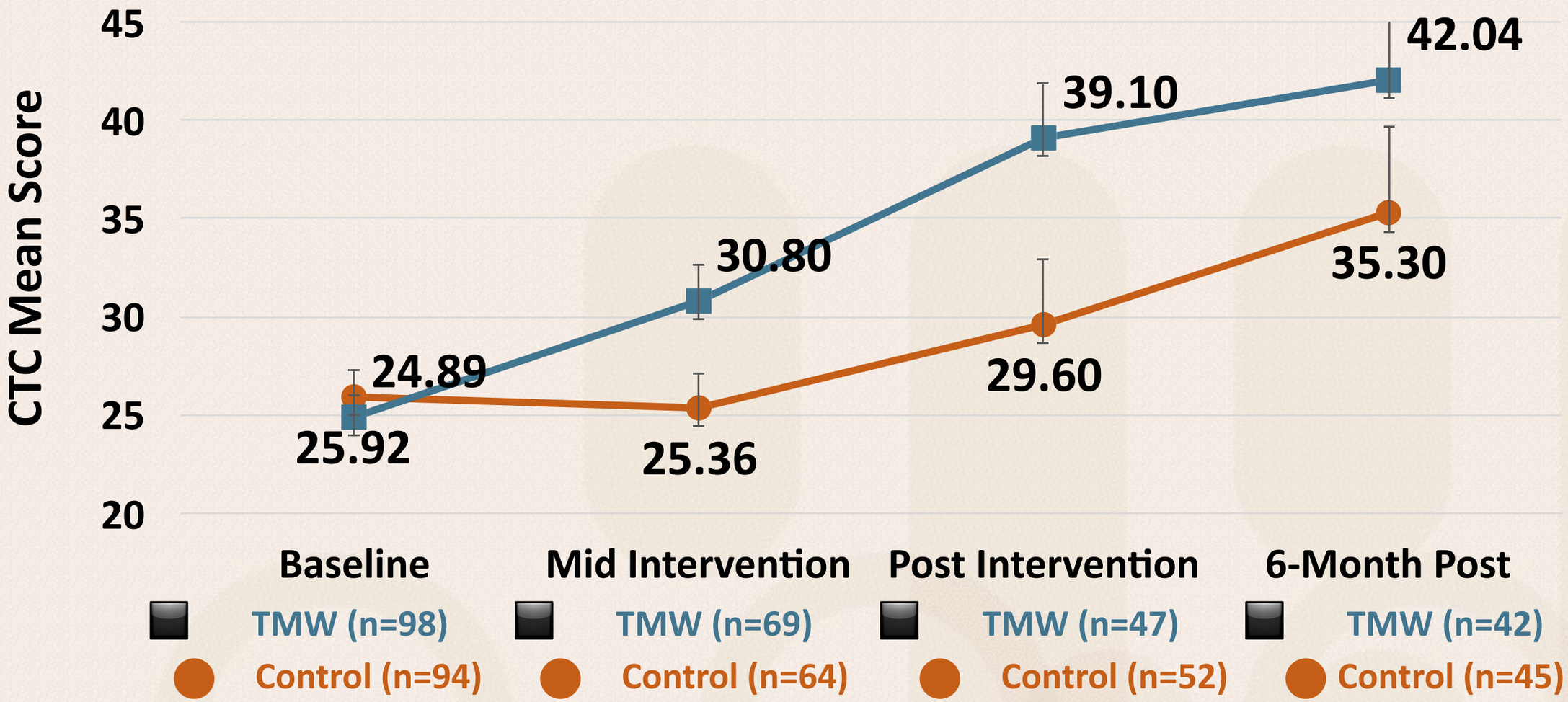
- Hourly estimate of the frequency of adult communicative interactions with the child
- Measure of the home language environments

# Conversational Turn Count (CTC) by Group over Time

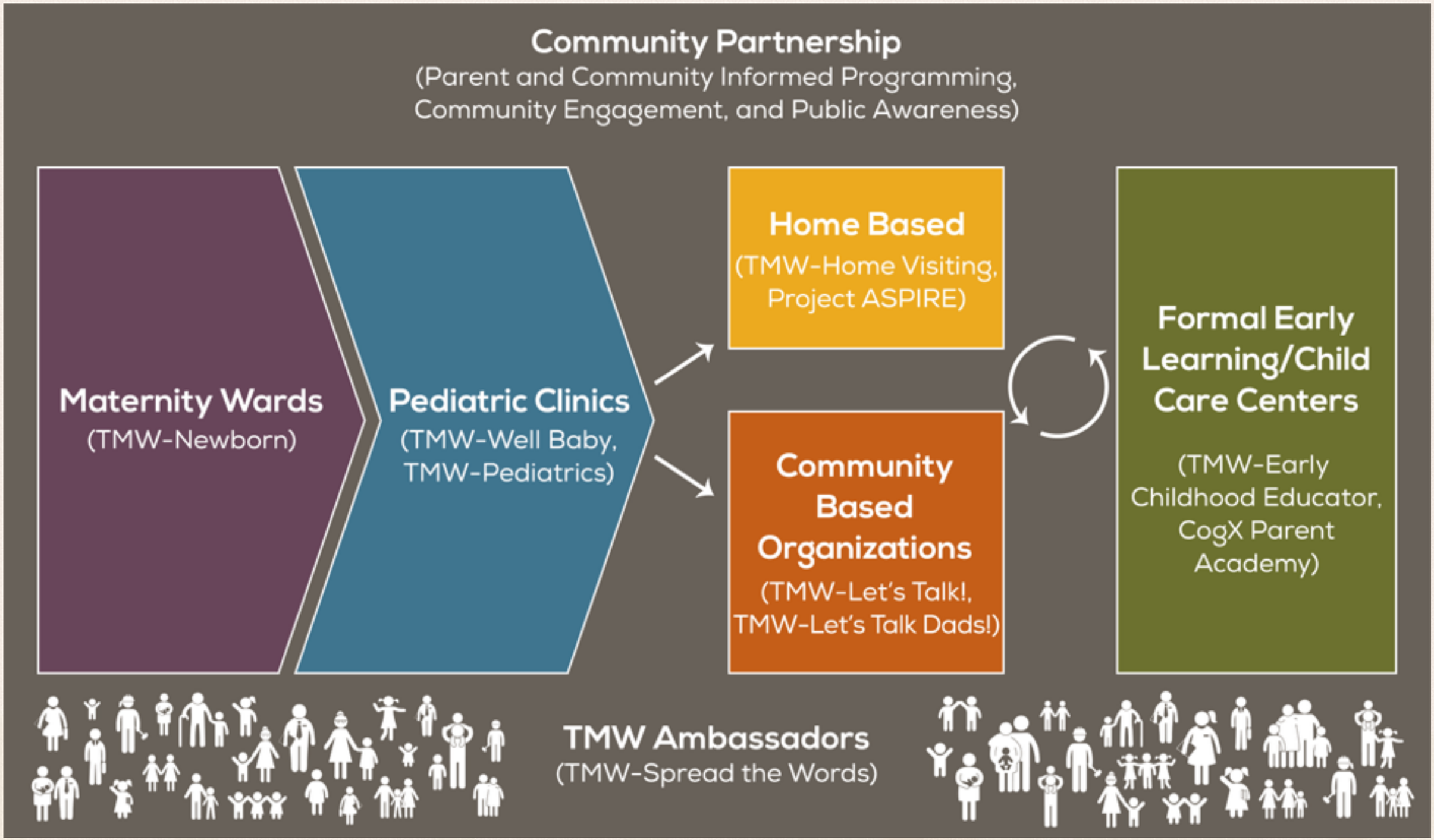



Center for Early Learning + Public Health

# Conversational Turn Count (CTC) by Group over Time



# TMW's Model for a *Parent*-Centered Public Health Approach to Early Learning



# TMW's *Parent*-Centered Public Health Approach to Early Learning

- **Asset** based
- Places parents and caregivers at the center
- Connect with families at **multiple touch points** across systems throughout first three years of a child's life
- Developed in **partnership** with parents, providers and communities
- Technology driven, human-assisted
- Designed to work in conjunction with other programs (e.g. Reach out and Read, VROOM, Healthy Steps)

Center for Early Learning + Public Health

# TMW Center for Early Learning + Public Health

- Joint venture - Biological Sciences and Social Sciences Divisions

  Co-Directors: Dana Suskind, MD
  John List, PhD

- Advances public health approach for early learning informed by behavioral economics

- Leverages technology platform to facilitate intervention at scale and drive innovation

- Develops city- and community-wide implementation and evaluation models

# TMW's Strategic Priorities

Develop evidence-based interventions and tools in early childhood – Refine and build out a broader suite of TMW Initiative interventions, leveraging the feedback-driven innovation cycle to continue to iterate on design and application of interventions

Demonstrate community-wide proof points – Collaborate with 1-2 pilot communities and local partners to embed the integrated suite of TMW interventions at scale within existing health, education, and community social service systems, reaching a significant portion of the target population

Advance the science of scaling – Develop a robust research base on interventions that impact educational outcomes and drive greater uptake of evidence-based interventions by public health and education systems by leveraging a network of interdisciplinary research sites to test and validate science-based interventions – advance the science of science

Catalyze the field – Advance the awareness and capability of health, education, and social services leaders in the application of the public health approach in the early childhood space

# Community-Wide Proof Points

**Collaborate with 1-2 pilot communities** and local partners **to embed the integrated suite of TMW interventions at scale** within existing health, education, and social service systems reaching a significant portion of the target population

Center for Early Learning + Public Health


thirty
ribbon
words

# Gratitude to our Generous Funders and

PNC Foundation

Hemera Foundation

W.K. Kellogg Foundation

Pritzker Traubert Family Foundation

Heising-Simons Foundation

Robert R. McCormick Foundation

Renee Adelson Early Childhood Innovation Fund

Einhorn Family Charitable Trust

Hearst Foundations

Lillian R. and Hyman T. Milgrom

Prosper Road Foundation

The University of Chicago

Center for Early Learning + Public Health