Effects of *Play and Learning Strategies* for Spanish-dominant Latine Families in Reading and Free Play Contexts

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Background

How parents **respond to their child's initiations** and **guide their child's learning** in early childhood shapes long-term language outcomes.

Interventions that coach parents to **respond to child signals** and **provide verbal scaffolds** have been found to impact parent and child behaviors.

However, less is known about **how intervention effects vary** for families from different linguistic and ethnic backgrounds.

Landry et al., 1998; Raby et al., 2015; Tamis-LeMonda et al., 2001

Heidlage et al., 2020; Jeong et al., 2021; Roberts et al., 2019

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Why is it important to know **what works for whom** in parent interventions?

- The goal is to **reduce** disparities in child outcomes

- Interventions that are less effective for families who are already at a disadvantage could **exacerbate** disparities

- **Latine* families**
  - 28% of public school children (NCES, 2022)
  - More likely to experience poverty (Lopez & Velasco, 2011)
  - Diverse home language and cultural practices

*Gender-inclusive term that is pronounceable in Spanish to refer to individuals whose cultural background originated in Latin America

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Why might parent intervention effects differ for Latine families?

- Parent and child behaviors often observed during *book reading* and *play*

- Previous studies found more supportive talk during book reading than play, but most included only English monolinguals in the United States (Hoff-Ginsberg, 1991; Jones & Adamson, 1987; Tamis-LeMonda et al., 2019; Yont et al., 2003)

- Latine families may have **different cultural practices**
  - More effective scaffolds and complex topics during "home-like tasks" than "school-like tasks"
    (Kermani & Janes, 1999; Eisenberg, 2002)
  - Longer utterances during play than book reading
    (Salo, Rowe & Leech, 2016)

The PALS Parent Intervention

Main Concepts (from 16-year study by Landry et al., 2001)

1. Identifying **child signals** and **responding contingently and sensitively**
2. Providing information following child interest (**labeling, verbal scaffolding**)
3. Avoiding restrictions and helping child manage **emotions and behavior**

15 weekly sessions

Watch online module

Parent video practice

1-on-1 coach call

Previous PALS studies

Across 6 RCTs, PALS impacted
- Parent responsiveness
- Parent language support
- Child language use
- Child vocabulary
- Child executive function

Feil et al., 2020; Guttentag et al., 2014; Landry et al., 2006; Landry et al., 2008; Landry et al., 2017; Landry et al., 2021

Adaptations
- Infants
- Toddlers & preschoolers
- Spanish-speaking families
- Remote delivery

But no study has looked at PALS effects separately for Spanish-speaking Latine families

The current study

- Secondary analysis of a PALS RCT (Landry et al, 2021)
- 391 PK children and parents with data on:
  - Ethnicity (Latine or non-Latine)
  - Language preference (Spanish or English)
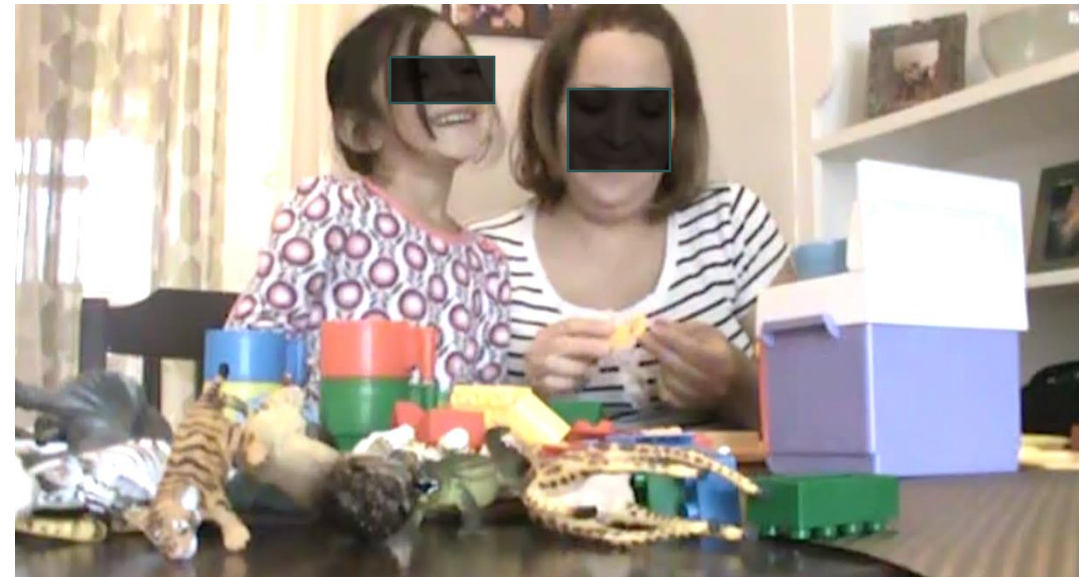 - Video observations of **book reading** and/or **free play** at pre & post-test

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Do PALS effects differ by ethnicity/language group?

RQ1: ...on **parent** behaviors during book reading?

RQ3: ...on **parent** behaviors during free play?
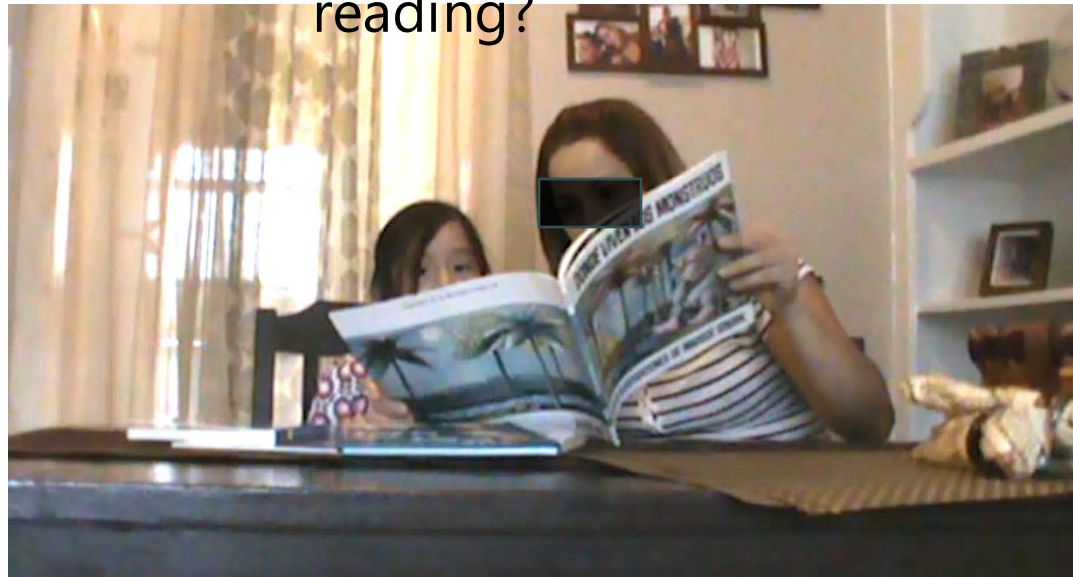
RQ2: ...on **child** behaviors during book reading?

RQ4: ...on **child** behaviors during free play?

Method: Participants

- 3-5 year-olds (M = 4.4 years) (n = 391)
- Head Start* centers in Texas
- 94% mothers
- Random assignment to PALS or control group
- ***For current analysis, we created 3 subgroups based on ethnicity and preferred language:***

Spanish-dominant Latine (n=142)	English-dominant Latine (n = 112)	Non-Latine (92% Black) (n = 137)
• Preferred **Spanish** • **89% Spanish** most-spoken home language	• Preferred **English** • **70% English** most-spoken home language	• Preferred **English** • **95% English** most-spoken home language
• 74% educated **outside U.S.** • Least formal education (M = 10.40 years) • Most two-parent homes • Most full-time homemakers	• **98%** educated **in U.S.** • More formal education (M = 12.33 years) • Fewer two-parent homes • Fewer full-time homemakers	• **84%** educated **in U.S.** • Most formal education (M = 13.43 years) • Least two-parent homes • Fewest full-time homemakers

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*Government-subsidized – families must meet income eligibility requirements

Method: Parent and Child Behavior Ratings (1-5 scale)

Book Read

Free Play

Parent Language Building Strategies

Parent Comprehension Strategies

Parent Responsiveness

Child Language Use

Child Engagement

Parent Verbal Scaffolding

Parent Labeling Frequency

Parent Labeling Quality

Child Goal-directed Behavior

Child Receptive Responsiveness

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Method: Parent and Child Behavior Ratings (coded on a 1-5 scale)

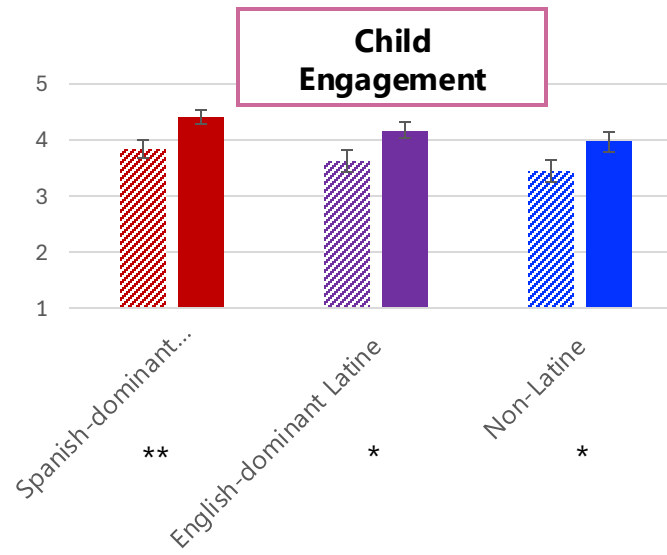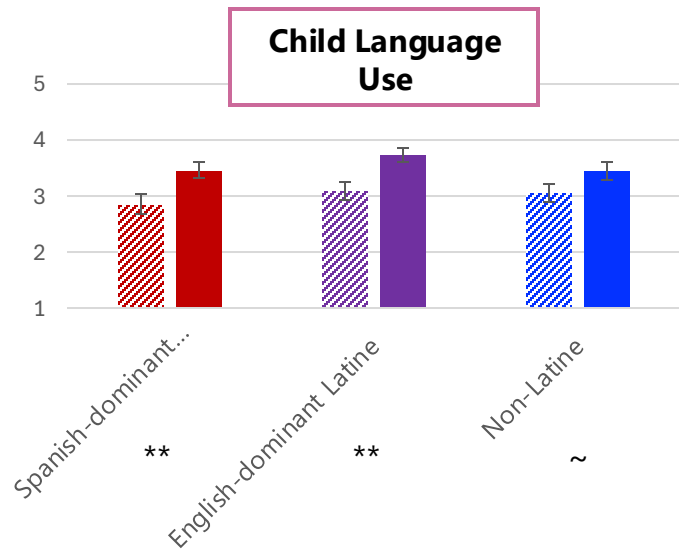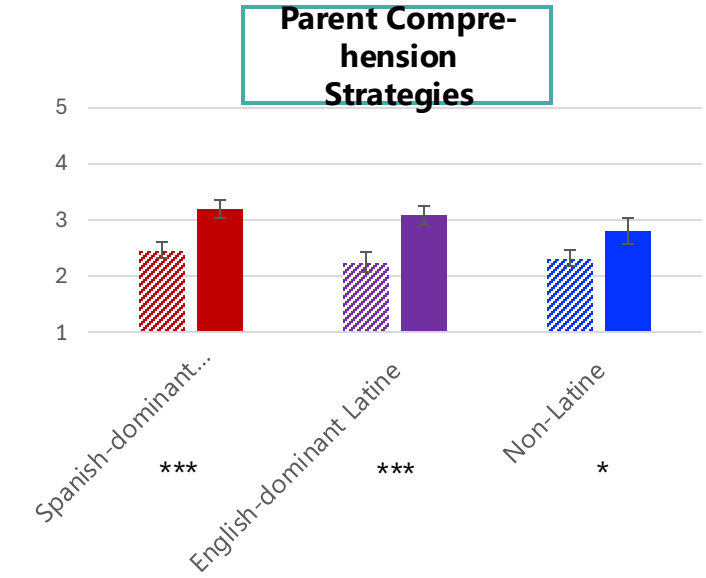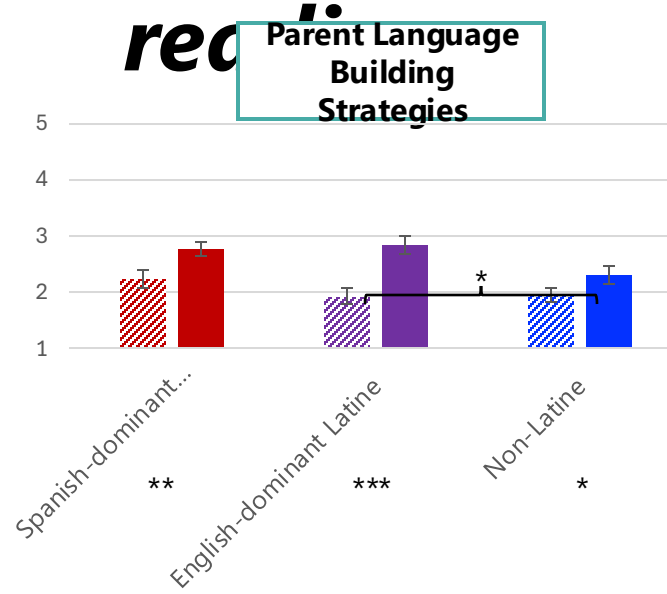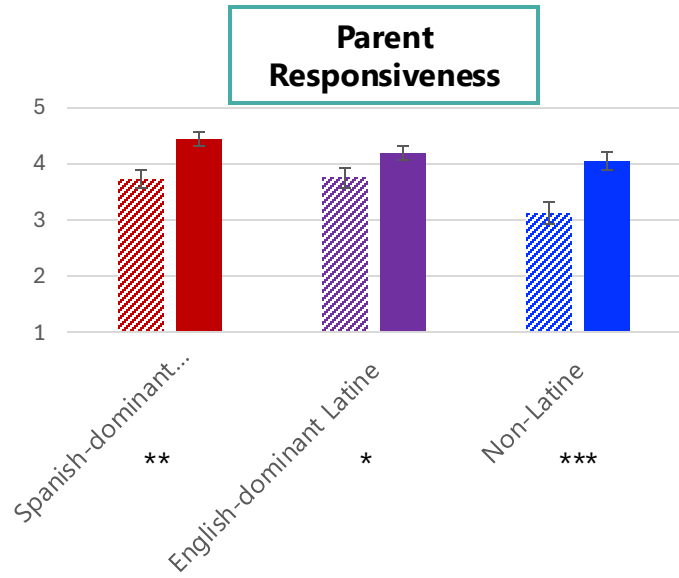| Parent behaviors during book reading		Parent behaviors during free play	
Contingent responsiveness	Parent responsiveness to the child's verbal and non-verbal signals, with higher scores indicating more prompt and sensitive responsiveness.	Contingent Responsiveness	Parent responsiveness to the child's verbal and non-verbal signals, with higher scores indicating more prompt and sensitive responsiveness.
Language building strategies	Parents' use of strategies to elicit child talk outside the text of the book. Higher scores represent greater use of open and closed questions to encourage child to verbalize.	Verbal Scaffolding	Parents' language use to make connections between objects, actions, and events. Higher scores represent more frequent use of scaffolding and talk about cause and effect, explanations, comparisons, and predictions.
Comprehension techniques	Parents' use of strategies to help the child understand the book, including extratextual talk discussing the meaning, acting out the story, and orienting the child to pictures or text. Higher scores represent more frequent and effective strategy use.	Labeling Frequency	The quantity of labels provided for objects and actions. (28 or more labels received a score of 5, 21-27 labels received a 4, 14-20 labels received a 3, 7-13 labels received a 2, and 6 or fewer labels a score of 1.)
		Labeling Quality	The quality of labels provided for objects and actions, with higher ratings reflecting greater use of more specific, abstract, or technical vocabulary labels.
Child behaviors during book reading		Child behaviors during free play	
Child Language Use	The extent that the child engages in conversation by asking questions, making comments, or providing explanations during the book read.	Child language use	The extent to which the child uses language to engage in conversation, make themselves understood, and ask questions during play
Child Engagement	The child's interest and involvement in the book reading activity, as evidenced by the child's gestures, gaze, questions, and comments.	Child goal-directed behavior	The extent to which the child attends to and shows organized behavioral responses to toys and the parent during play.
		Child receptive responsiveness	The extent to which the child responds appropriately to requests during play and conversations.

Method: Analytic Strategy

- 12 multiple regression models (one per behavior rating)
- Dependent variable: behavior rating at post-test
- Key predictors
  - PALS condition
  - Subgroup
  - **PALS x subgroup interaction**
- Controlling for
  - Behavior rating at pretest, parent education, two-parent home, parent homemaker status, child sex*, classroom condition*

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Results: PALS Effects on Parent & Child Behaviors During Book Reading

PALS effects on parent & child behaviors during *book reading*

Parent Responsiveness

(bar chart; y-axis 1–5)

Spanish-dominant... **   English-dominant Latine *   Non-Latine ***

Parent Language Building Strategies

(bar chart; y-axis 1–5)

Spanish-dominant... **   English-dominant Latine ***   Non-Latine *

Parent Compre-hension Strategies

(bar chart; y-axis 1–5)

Spanish-dominant... ***   English-dominant Latine ***   Non-Latine *

Child Language Use

(bar chart; y-axis 1–5)

Spanish-dominant... **   English-dominant Latine **   Non-Latine ~

Child Engagement

(bar chart; y-axis 1–5)

Spanish-dominant... **   English-dominant Latine *   Non-Latine *

Control   Intervention

Marginal mean ratings at posttest, controlling for pretest rating and all covariates

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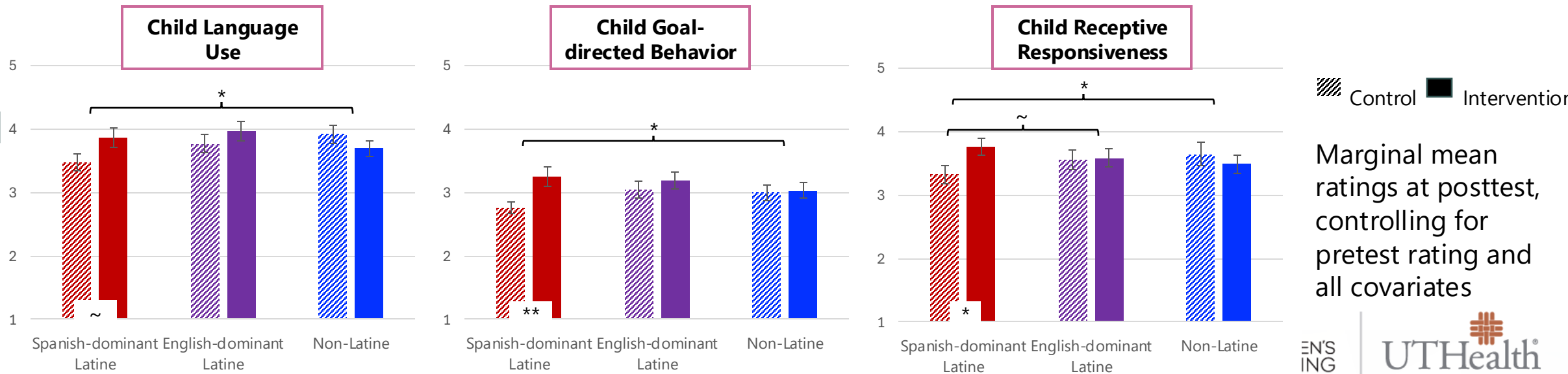$\tilde{}p < .1$, *$p < .05$, **$p < .01$, ***$p < .001$
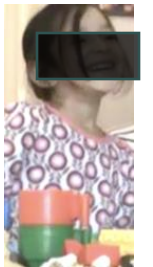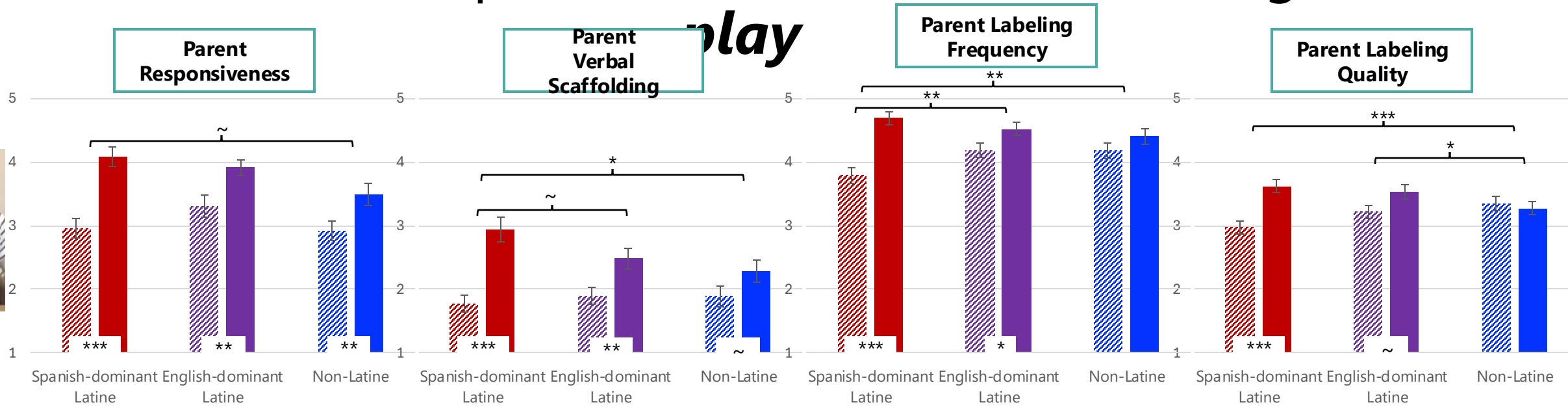
Book Reading Summary

- PALS effects were similar across the three subgroups, with one exception:
  - **English-dominant Latine parents** who received PALS were rated higher in language building strategies than **Non-Latine parents**
- All three groups benefitted to a comparable degree from PALS in book-reading behaviors

Results: PALS Effects on Parent & Child Behaviors During Free Play

PALS effects on parent & child behaviors during *free play*

~*p* < .1, **p* < .05, ***p* < .01, ****p* < .001

Free play summary

- PALS effects were largest for the **Spanish-dominant Latine group**
- Parents who received PALS in Spanish benefitted more than parents who received PALS in English in the ways they supported their child's language development during **free play**

Discussion: Subgroup differences

- English-dominant Latine group
  - Grew more in language building *during* **book reading**
  - Maybe because educated in the U.S. and more acculturated to U.S. norms?
- Spanish-dominant Latine group
  - Larger PALS effects in all parent and child behaviors during ***free play***
  - Possible explanations:
    - Coach-parent ethnicity match
    - Course materials ethnicity match
    - Demographic differences (but controlled for education, two-parent home, and full-time homemaker status)

Discussion: Activity context differences (book read vs. free play)

- Spanish-dominant Latine parents **more at ease during free play** (home-like task) than during book reading (school-like task)?
  (Eisenberg, 2002; Kermani & Janes, 1999)

- **Free play may be more variable** and more malleable to intervention for some groups?
  (Snow et al., 1976; Dunn et al., 1977)

- Spanish-dominant Latine parents had more room for growth in labeling during play, and the intervention strategies may have **aligned with existing cultural beliefs**?
  (Cycyk & Hammer, 2020; Farver & Howes, 1993; Fasoli, 2014; Vigil & Hwa-Froelich, 2004)

Limitations and Next Steps

- Groups were based on **parent's preferred language** – control parents may have chosen a different language had they been assigned to PALS

- Original study not designed to directly compare book read and free play settings

- Current analysis was not able to look at parent support of Spanish vs. English

- **Next steps**
  - Re-analyze videos to examine parent and child use of Spanish and English
  - Identify additional **Spanish-supportive strategies**
  - Ultimate goal: develop culturally and linguistically sustaining interventions that build on families' practices and strengths

Acknowledgements

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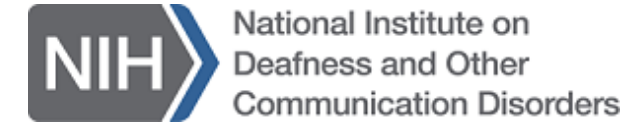
Research Staff

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Questions?

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Extra Slides

Parent behaviors during book reading

	Model 1: **Parent Responsiveness**	Model 2: **Parent Language Building**	Model 3: **Parent Comprehension Strategies**
PALS condition	0.928***	0.360*	0.493*
Spanish-dominant Latine	0.596*	0.288	0.150
English-dominant Latine	0.631*	-0.020	-0.062
PALS x Spanish-dominant Latine	-0.214	0.177	0.231
PALS x English-dominant Latine	-0.492	0.554*	0.340
Parent Education (years)	0.033	0.100***	0.023
Two parents live in home	-0.095	0.212~	-0.060
Parent contributes to finances	-.063	0.173	0.005
Dependent variable at pretest	0.167**	0.261***	0.366***
Intercept	2.333***	-0.080	1.150**
Observations	373	373	373
R^2	0.147	0.192	0.183

Reference group = Non-Latine

Child behaviors during book reading

	Model 4: **Child Language Use**	Model 5: **Child Engagement**
PALS condition	0.387~	0.518*
Spanish-dominant Latine	-0.210	0.384
English-dominant Latine	0.027	0.165
PALS x Spanish-dominant Latine	0.214	0.050
PALS x English-dominant Latine	0.255	0.035
Parent Education (years)	0.012	0.033
Two parents live in home	-0.145	-0.102
Parent contributes to finances	-0.012	-0.132
Child is female	0.045	0.229~
Classroom condition	-0.017	0.087
Dependent variable at pretest	0.258***	0.201***
Intercept	2.286***	2.397***
Observations	373	373
R^2	0.136	0.124

Reference group = Non-Latine

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Parent behaviors during free play

	Model 6: **Parent Responsiveness**	Model 7: **Parent Verbal Scaffolding**	Model 8: **Parent Label Frequency**	Model 9: **Parent Label Quality**
PALS condition	0.579**	0.397	0.225	-0.081
Spanish-dominant Latine	0.044	-0.115	-0.390*	-0.378*
English-dominant Latine	0.393	0.001	0.006	-0.134
PALS x Spanish-dominant Latine	0.550~	0.765*	0.680**	0.725***
PALS x English-dominant Latine	0.035	0.192	0.112	0.397
Parent Education (years)	0.047*	0.019	0.039*	0.007
Two parents live in home	0.148	-0.117	0.129	0.150
Parent contributes to finances	0.027	-0.291*	-0.128	-0.051
Dependent variable at pretest	0.318***	0.302***	0.404***	0.320***
Intercept	1.212**	1.299**	2.051***	2.222***
Observations	358	358	358	358
R^2	0.219	0.184	0.289	0.148

Reference group = Non-Latine

Child behaviors during free play

	Model 10: **Child Language Use**	Model 11: **Child Goal-Directed Behavior**	Model 12: **Child Receptive Responsiveness**
PALS condition	-0.225	0.037	-0.155
Spanish-dominant Latine	-0.445*	-0.241	-.313
English-dominant Latine	-0.150	0.045	-0.085
PALS x Spanish-dominant Latine	0.622*	0.451*	0.596*
PALS x English-dominant Latine	0.421	0.111	0.183
Parent Education (years)	0.005	0.009	0.011
Two parents live in home	-0.028	0.064	0.055
Parent contributes to finances	-0.083	-.002	-0.170
Child is female	0.245	0.116	0.159
Classroom condition	-0.015	-.063	-0.161
Dependent variable at pretest	0.368***	0.272***	0.196***
Intercept	2.531***	2.070***	2.930***
Observations	358	358	358
R^2	0.209	0.114	0.061

Reference group = Non-Latine

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PALS Parent Intervention Session Schedule

Timing Goal	Session Topics	Hours
October		
November		
	Deliver tablet at home visit and 1. Introduction	1
	Coaching – Introduction	.5
	2. Reading Children's Signals module	1
	Coaching – Signals	.5
December	3. Warm Responding I	1
	Coaching – Responsiveness	.5
	4. Supporting Language Development module I – Labeling	1
	Coaching – Language I	.5
January	5. Maintaining Children's Interest module	1
	Coaching – Maintaining	.5
	6. Reading with Young Children module	1
	Coaching – Shared Reading	.5
February	7. Supporting Language Development module II– Linking Objects & Actions	1
	Coaching – Language Development	.5
	8. Review with Alternate Caregiver I	1
	9. Guiding Children's Behavior module I	1

Timing Goal	Session Topics	Hours
March	Coaching – Behavior	.5
	10. Supporting Language Development module II– Helping Children Learn Words	1
	11. Daily Routines module	.5
	Coaching – Behavior and Routines	1
	12. Guiding Children's Behavior module II	1
April	Coaching – Behavior	.5
	13. Warm Responding module II	1
	Coaching – Warm Responding	.5
	14. Optional review with Alternate Caregiver II	1
	15. Putting It All Together module	1
May	Coaching – Putting it All Together/ Review	.5
	Pick up tablet and give graduation certificate at home visit	1
Total	15 didactic modules 6-15 coaching sessions 1-2 review with alternate caregiver	

List of book titles provided to parent for book read activity

English title	Spanish title	Author
Cat in the Hat	El gato ensombrerado	Dr. Seuss
Going to Bed	Buenas noches a todos	Sandra Boynton
Rainbow Fish	El pez arcoiris	Marcus Pfister
Big Dog Little Dog	Perro grande… perro pequeño	P. D. Eastman
The Very Hungry Caterpillar	La oruga muy hambrienta	Eric Carle
Where the Wild Things Are	Donde viven los monstruos	Maurice Sendak

Descriptive statistics of parent & child behavior ratings

Variable	Pretest M (SD), range	Posttest M (SD), range
Book - Parent Responsiveness	3.01 (1.23), 1-5	3.86 (1.27), 1-5
Book - Parent Language Building	2.22 (1.18), 1-5	2.37 (1.26), 1-5
Book - Parent Comprehension Strategies	2.53 (1.21), 1-5	2.69 (1.32), 1-5
Book - Child Language Use	2.80 (1.28), 1-5	3.31 (1.26), 1-5
Book - Child Engagement	3.24 (1.25), 1-5	3.92 (1.22), 1-5
Play - Parent Responsiveness	3.20 (1.13), 1-5	3.43 (1.25), 1-5
Play - Parent Verbal Scaffolding	2.07 (1.19), 1-5	2.22 (1.30), 1-5
Play - Parent Label Frequency	4.10 (1.12), 1-5	4.29 (1.06), 1-5
Play - Parent Label Quality	3.05 (0.90), 1-5	3.33 (0.95), 1-5
Play - Child Language Use	3.46 (1.22), 1-5	3.77 (1.14), 1-5
Play - Child Goal-directed Behavior	2.76 (0.91), 1-5	3.03 (0.91), 1-5
Play - Child Responsiveness	3.34 (1.08), 1-5	3.56 (1.13), 1-5

Pairwise correlations among behavior ratings at posttest & covariates

Book Read - Parent

Variable	(1)	(2)	(3)	(4)	(5)
(1) Parent responsiveness	1.000				
(2) Parent language building	0.289***	1.000			
(3) Parent comprehension tech.	0.330***	0.524***	1.000		
(4) Parent years of education	0.028	0.196***	0.045	1.000	
(5) Two parents live in home	0.052	0.108*	0.048	-0.158**	1.000
(6) Parent contributes to finances	-0.076	-0.001	-0.064	0.191***	-0.282***

Book Read - Child

Variable	(1)	(2)	(3)	(4)	(5)	(6)
(1) Child language use	1.000					
(2) Child engagement	0.612***	1.000				
(3) Parent years of education	0.091	0.047	1.000			
(4) Two parents live in home	-0.052	0.036	-0.158**	1.000		
(5) Parent contributes to finances	0.027	-0.085	0.191***	-0.282***	1.000	
(6) Child is Female	0.017	0.092	0.093	-0.053	0.036	1.000
(7) Classroom condition	-0.024	0.035	-0.066	0.042	-0.162**	0.044

Pairwise correlations among behavior ratings at posttest & covariates

Toy Play - Parent

Variable	(1)	(2)	(3)	(4)	(5)	(6)
(1) Parent responsiveness	1.000					
(2) Parent Verbal Scaffolding	0.391***	1.000				
(3) Parent Label Frequency	0.517***	0.451***	1.000			
(4) Parent Label Quality	0.511***	0.484***	0.581***	1.000		
(5) Parent years of education	0.127*	0.026	0.147**	0.050	1.000	
(6) Two parents live in home	0.081	0.012	0.070	0.084	-0.158**	1.000
(7) Parent contributes to finances	-0.042	-0.099	-0.031	-0.081	0.191***	-0.282***

Toy Play - Child

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Child language use	1.000						
(2) Child Play Goals	0.492***	1.000					
(3) Child Responsiveness	0.688***	0.411***	1.000				
(4) Parent years of education	0.125*	0.069	0.086	1.000			
(5) Two parents live in home	-0.122*	-0.015	-0.010	-0.158**	1.000		
(6) Parent contributes to finances	0.081	0.014	-0.015	0.191***	-0.282***	1.000	
(7) Child is Female	0.150**	0.091	0.099	0.093	-0.053	0.036	1.000
(8) Classroom condition	-0.029	-0.021	-0.038	-0.066	0.042	-0.162**	0.044