

Measuring Father Involvement, the Parent-Child Relationship, and Risk Factors in the Home Environment of Young Children

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Overview

- Pilot Study targeting Father Involvement in Home Visiting Services
- LENA used as objective measure to validate and elucidate self-report measures and provide unique data
 - Father/Mother Involvement with Child
 - Parent Relationship
 - Harshness of Child's Environment
- Reliability and Feasibility of using the LENA

Methods: Design and Population

- Pilot Study Design
 - Quasi-experimental time lagged design
 - Comparison and Intervention groups
- Study Population
 - 24 families enrolling in home visiting programs
 - Eligibility within programs – low income, risk factors
 - Young children (birth to 2 years at intake)
 - Biological parents (not necessarily living together)
 - 80% of Comparison, 60% of Intervention

Methods: Survey + Lena

- Self-Report Data
 - Baseline and 4-month Follow-up Interviews
 - Measures: Father and Mother Involvement
 - Measures: Parent Relationship
 - Measures: Child Maltreatment Risk
- LENA Recordings
 - Baseline and 4-month Follow-up Interviews (left for parents to use the next day)
 - Tracking form – Time Recorded, People present, Request to Delete segments
 - Asked to record a “typical day” when both parents present
 - Not used as part of the intervention (parents did not hear the recordings)

Primary Study Results

- Self-Report Measures
 - Father involvement
 - Parent Relationship and Parenting outcomes
 - Maltreatment indicators
- Study Feasibility
 - Feasibility of Intervention
 - Feasibility of LENA
 - High rate of usage (all families attempted)
 - Issues with recordings (repeated pausing, many individuals in the home, TV/Radio Constantly on)

Self-Report Measures:

Parent Relationship/Support, Father Involvement, Child Maltreatment

	Comparison			Intervention			D: Intervention - Comparison
	Mean(SD) at baseline	Mean(SD) at follow-up	D score	Mean(SD) at baseline	Mean(SD) at follow-up	D score	
Mother Reports:							
<u>Mother/Father Relationship</u>							
Total Parent Alliance (PAI)	135.7(13.7)	115.0(27.9)	-.94	138.2(9.0)	136.9(9.9)	-.03	0.91
Support Subscale (RQ)	13.5(1.7)	10.1(3.7)	-1.17	13.7(1.2)	12.2(2.8)	-.70	0.47
Abuse Subscale(RQ)	5.4(2.1)	7(3.4)	.56	4.6(0.8)	4.4(0.8)	-.20	-0.76
<u>Parent Involvement</u>							
Father Involvement (with services)	24.8(9.2)	17.1(8.3)	-.88	29.0(3.8)	28.3(5.7)	-.15	0.73
Perceptions of Partner Involvement (MFI)	32.3(12.9)	21.9(19.6)	-.63	43.1(7.0)	38.2(12.1)	-.50	0.13
Perceptions of Own Involvement (MFI)	41.8(8.4)	44.3(6.7)	.32	48(5.8)	44.9(9.8)	-.38	-0.70
Perceptions of Partner Language Usage(MFI)	13.9 (9.8)	8.6 (10.3)	-0.53	18.4 (6.1)	16.8 (7.3)	-0.24	0.29
Perceptions of Own Language Usage (MFI)	19.3 (6.4)	22 (6)	0.44	23.1 (4.3)	21.8 (6.8)	-0.23	-0.66
<u>Maltreatment Risk</u>							
Psychological Aggression (PC-CTS)	9.1(7.3)	11.3(8.8)	.27	7.5(5.9)	7.3(5.5)	-.04	-0.31
	N 12	8		12	12		
Father Reports:							
<u>Mother/Father Relationship</u>							
Total Parent Alliance (PAI)	137.1(12.5)	128.3(29.5)	-.39	134.5(13.6)	129.0(18.5)	-.34	0.05
Support Subscale (RQ)	13.9(1.6)	12.0(4.2)	-.59	13.5(2.5)	13.2(2.5)	-.13	0.46
Abuse Subscale (RQ)	5(0.7)	5.5(1)	.58	4.7(1.0)	4.7(0.8)	.07	-0.51
<u>Parent Involvement</u>							
Father Involvement (with services)	26.8 (6.6)	22.3(3.6)	-.87	29.9(4.2)	29.5(5.2)	-.09	0.78
Perceptions of Partner Involvement (MFI)	42.1(7.5)	44.8(14.2)	.23	39.3(11.3)	42.9(13.9)	.29	0.06
Perceptions of Own Involvement (MFI)	33.6(10.1)	35.3(16.9)	.12	34.8(11.4)	33.2(11.0)	-.14	-0.26
Perceptions of Partner Language Usage(MFI)	21.8 (5.8)	22.5 (8.5)	0.10	17.9 (6.2)	20.4 (8.9)	0.33	0.23
Perceptions of Own Language Usage (MFI)	13.8 (7.1)	17 (9.5)	0.38	15.8 (5.8)	13.7 (6.5)	-0.34	-0.72
<u>Maltreatment Risk</u>							
Psychological Aggression (PC-CTS)	9.9(9.7)	9(6.2)	-.11	7.3(5.3)	5.4(1.2)	-.49	-0.38
	n 9	6		12	11		

LENA vs Self-Report Data

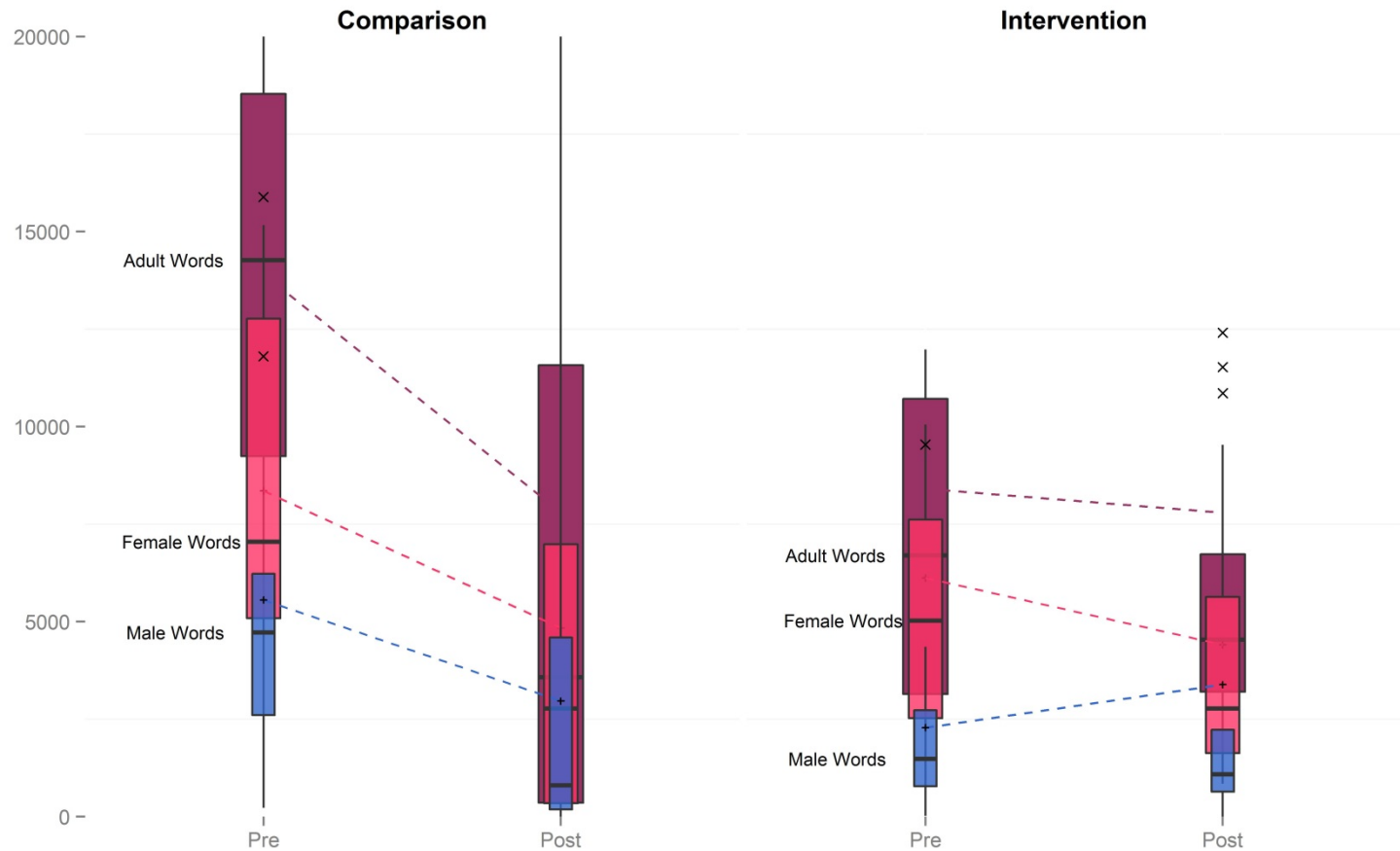
- Father Involvement
 - MAN_Word_Count (5 minute & Vocal Block detail)
 - Turn_Count (Vocal Block detail)
- Mother Involvement
 - FAN_Word_Count (5 minute detail)
- Parent Relationship/Coparenting
 - FAN & MAN Word_Count (5 minute detail)

5-Minute Output Data File

- Active Parent Involvement Time
 - Removed: neither parent in segment, when others in the home (IRB and Confounding), after child asleep, delete requests
- Total removed - 122 hours or 32% of the total recording:
 - 28% Neither Parent (sleeping or took off LENA)
 - 2% Others in the home (self-reported on form)
 - 3% Requested Deletions (requested on form)

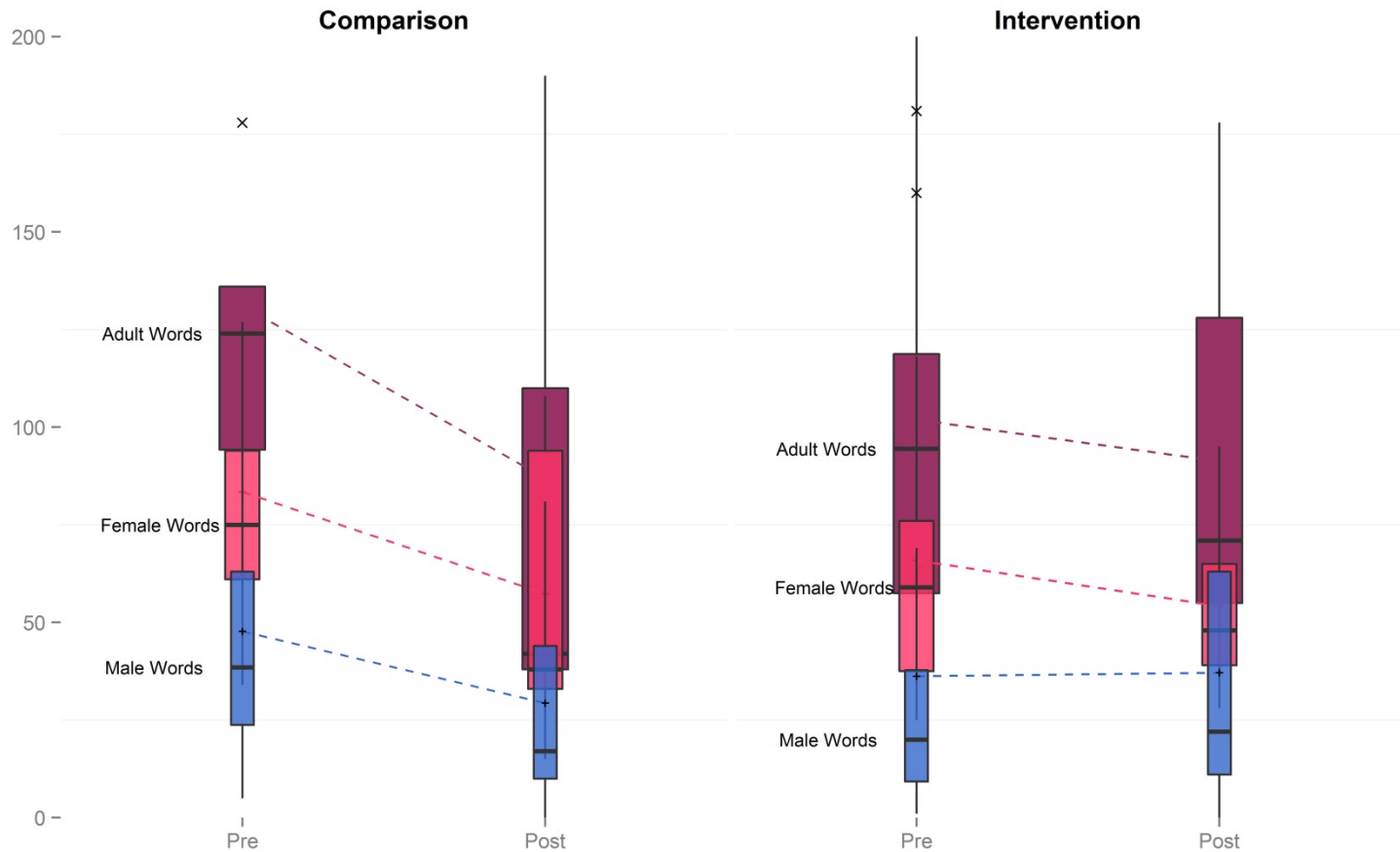
LENA Measures: Full Day

Adult (AWC), Female (FAN) and Male (MAN) Word Counts



LENA Measures: Per 5 minute Output

Adult (AWC), Female (FAN) and Male (MAN) Word Counts



Comparable Scales

- Mother/Father Involvement with Child
 - Play games like “peek-a-boo” or “gotcha” with (CHILD)
 - Sing Songs or nursery rhymes to (CHILD)
 - Read or Tell stories to (CHILD)
- Relationship Quality: Support and Abuse Subscales
 - She/He expresses affection or love for you
 - She insults or criticizes you or your ideas

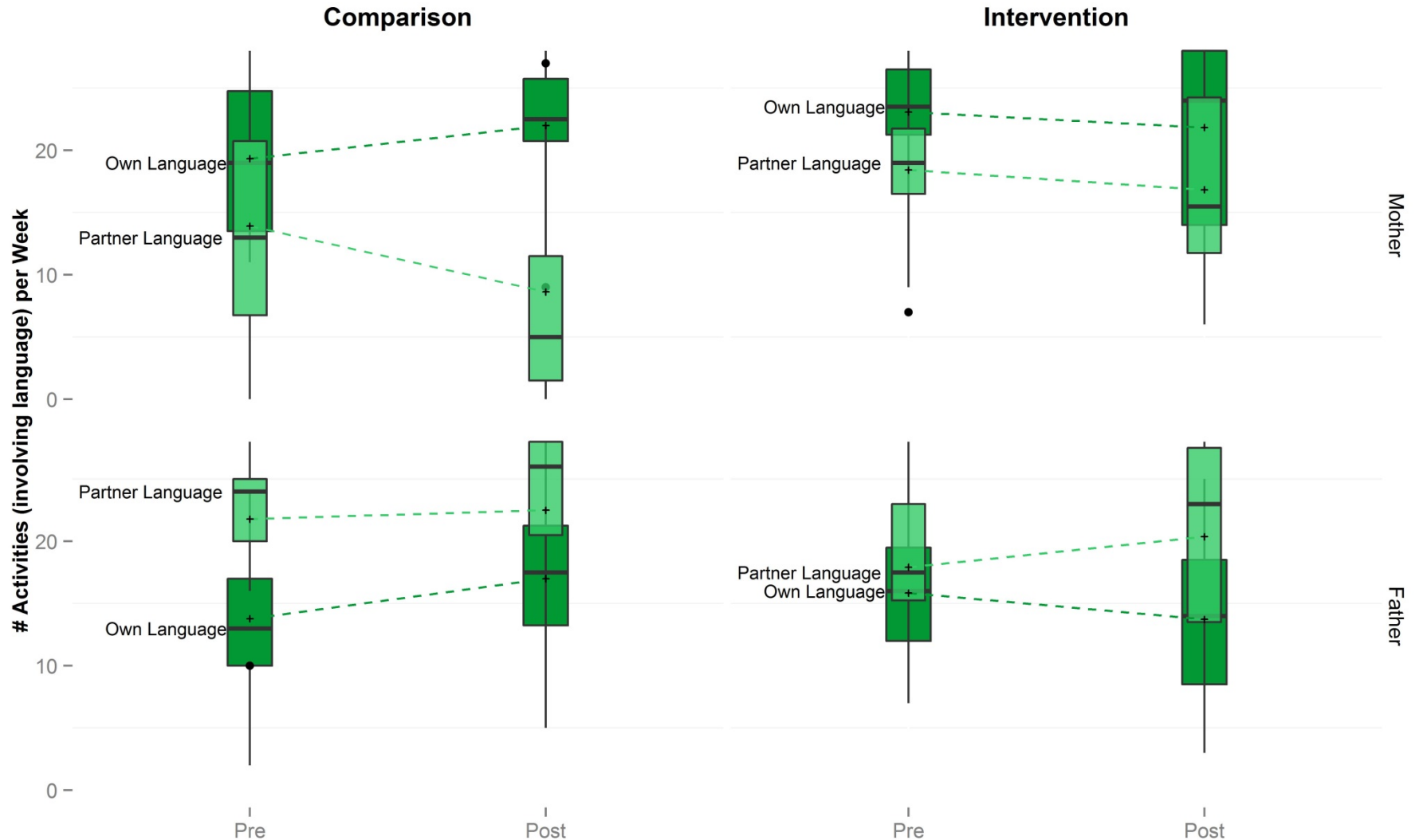
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n (parents)	12	8		12	12		
Father Reports:							
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Support Subscale (RQ)	13.9(1.6)	12.0(4.2)	-.59	13.5(2.5)	13.2(2.5)	-.13	0.46
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n (parents)	9	6		12	11		
<u>LENA Variables (per 5 minutes)</u>							
Adult Word Count (AWC)	131.5 (150.8)	116.1 (134.6)	-0.11	109.6 (120.8)	105.4 (127.4)	-0.03	0.07
Mother Word Count (FAN_Word_Count)	80.2 (104)	74.7 (97.8)	-0.05	80.2 (95.8)	61 (74.9)	-0.22	-0.17
Father Word Count (MAN_Word_Count)	51.3 (81.2)	41.4 (69.6)	-0.13	29.3 (59.1)	44.4 (77.5)	0.22	0.35
Turn Count	2.7 (3.8)	2.4 (3.4)	-0.08	2.1 (3.2)	1.5 (2.9)	-0.20	-0.11
n (rows - 5 minute increments)	1112	398		937	661		

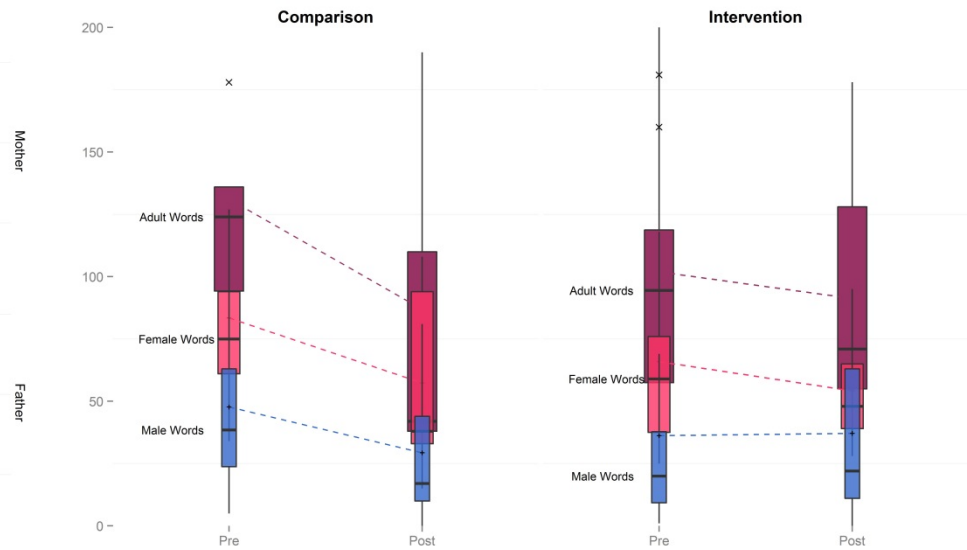
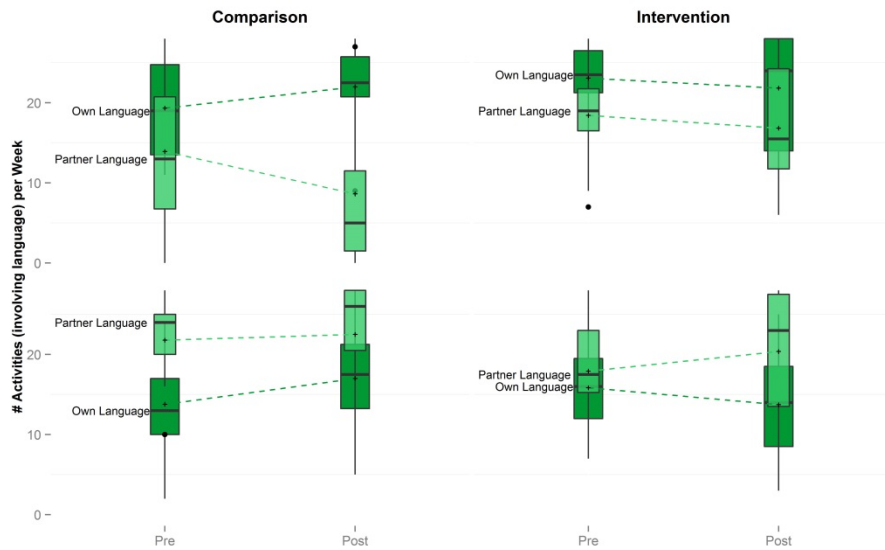
Self-Report Measures: Parent Involvement

Perceptions of Own and Partner Language Involvement with Child



Self-Report Measures: Parent Involvement

Perceptions of Own and Partner Language Involvement with Child

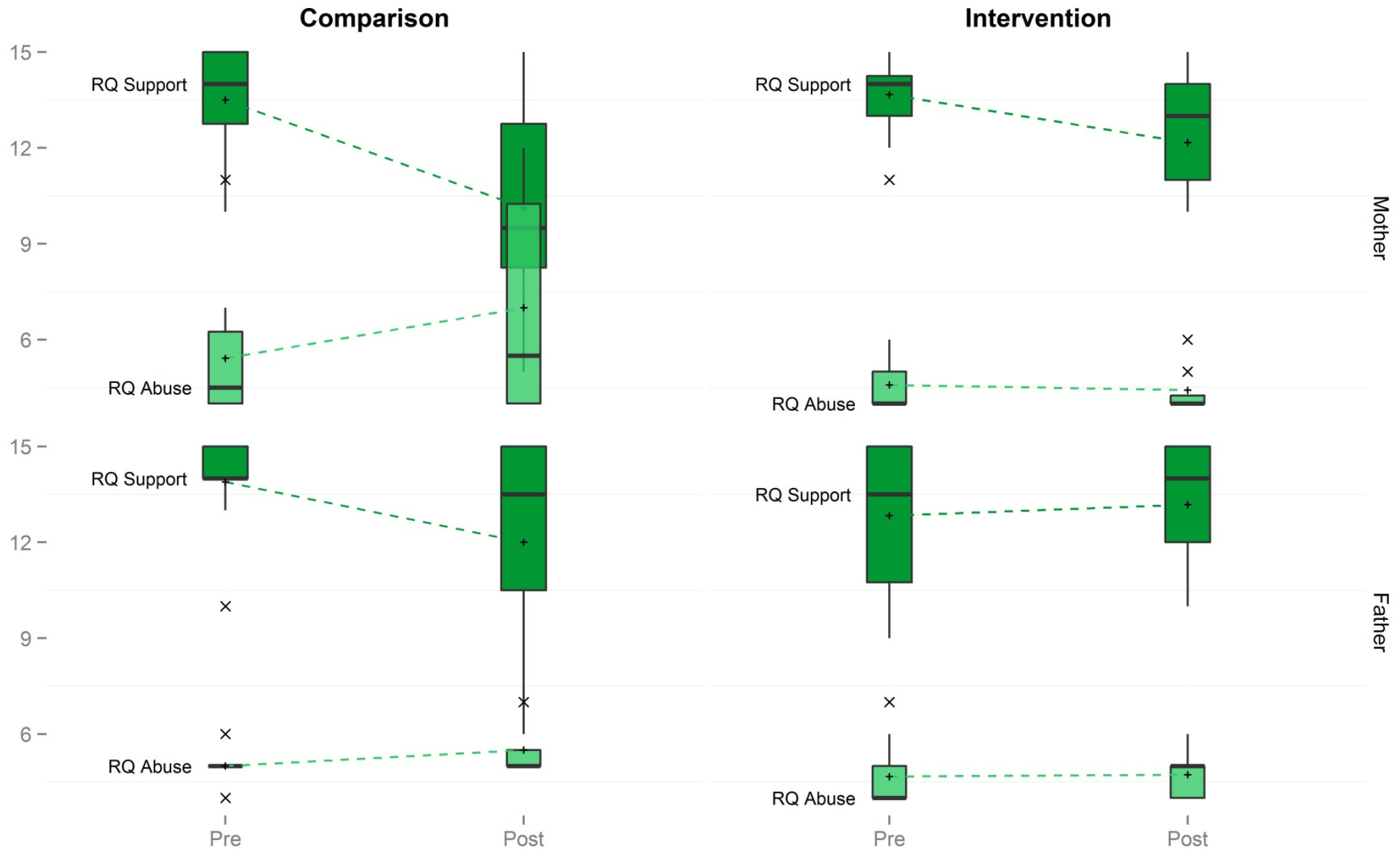


Pearson r	Female Word Count	Male Word Count
Mother - Own Language	.02	
Mother - Partner Language		.05
Father - Own Language		.02
Father - Partner Language	.30*	

* $p < .10$ ** $p < .05$ *** $p < .01$

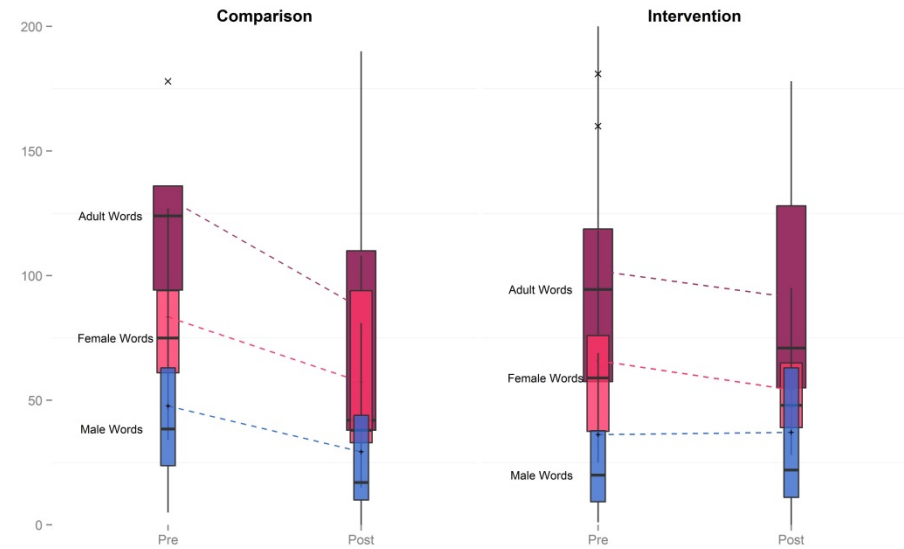
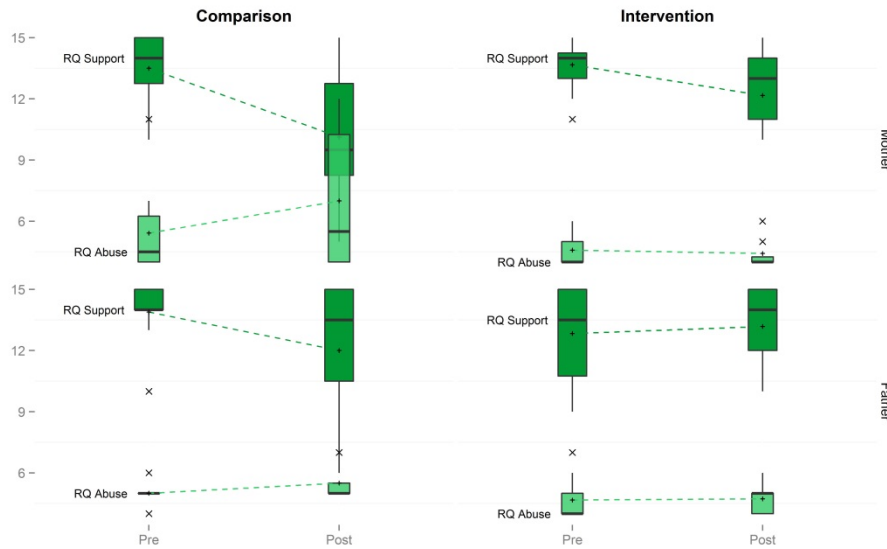
Self-Report Measures: Parent Relationship

Relationship Quality: Support and Abuse Attitudes Subscales



Self-Report Measures: Parent Relationship

Relationship Quality: Support and Abuse Attitudes Subscales



	Adult Word Count	Female Word Count	Male Word Count
Pearson r			
RQ Support	.39*	.18	.47*
RQ Abuse	-.53**	-.23	-.62**

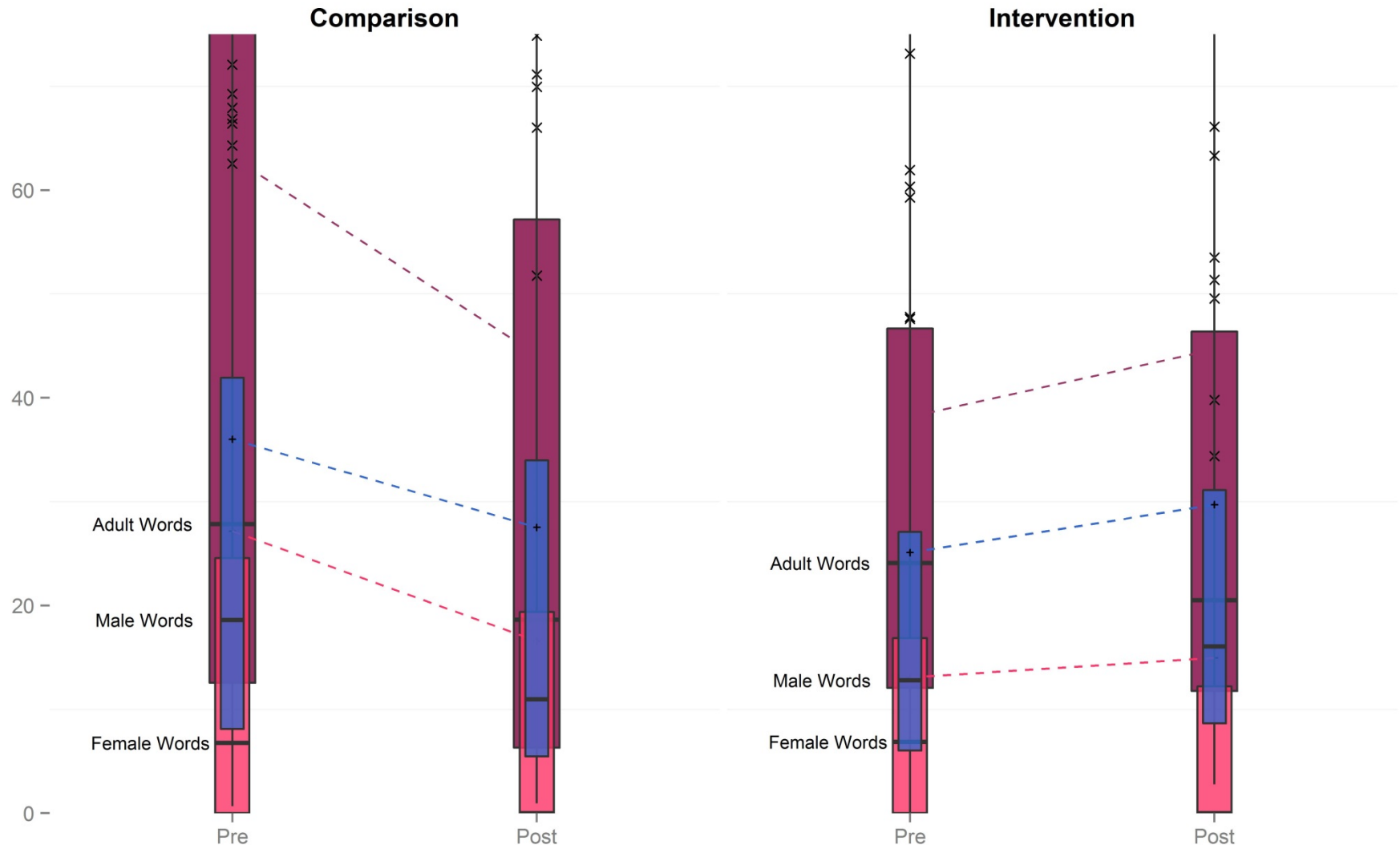
* p<.05 **p<.01

Father Child Relationship

- Conversational Turns and Male Word Count
- Filtered file to include Male initiated vocal blocks with child vocalizations (indicating a turn count)
- Limited to Male Conversational Turns with the Child that were Male Initiated (AICM + MA)
- Looking at quality or change in quality interactions

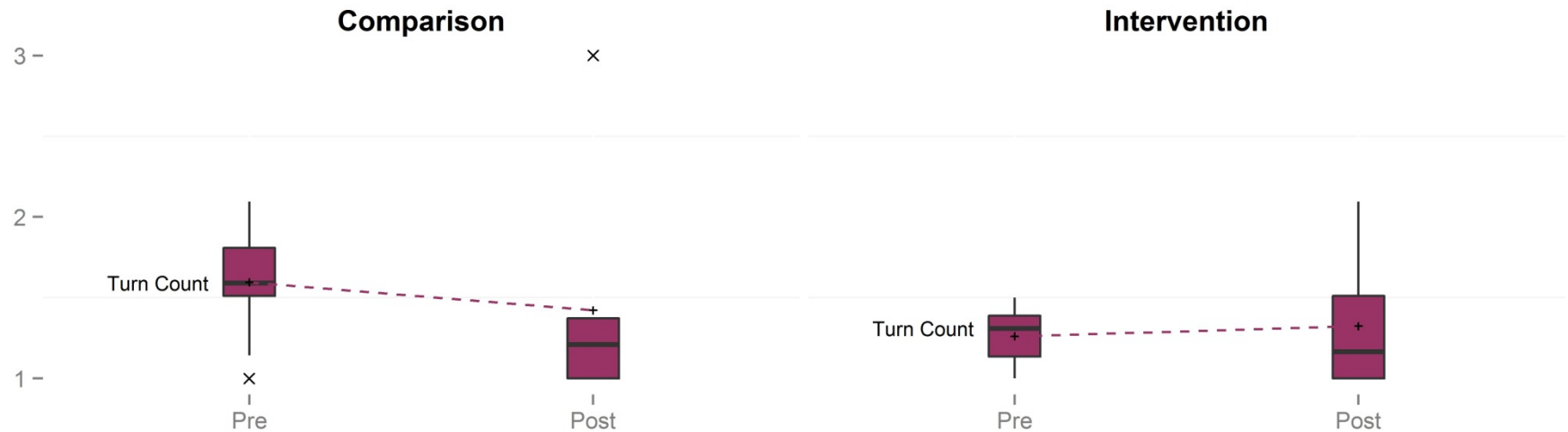
LENA Measures: Per Vocal Block (AICM + MA)

Adult (AWC), Female (FAN) and Male (MAN) Word Counts



LENA Measures: Per Vocal Block (AICM + MA)

Turn Count



LENA Variables:	Comparison			Intervention			D: Intervention - Comparison
	Mean(SD) at baseline	Mean(SD) at follow-up	D score	Mean(SD) at baseline	Mean(SD) at follow-up	D score	
Male Word Count (MAN_Word_Count)	36.1 (48.6)	27.3 (37.7)	-0.20	25.1 (35.1)	29.7 (37.8)	0.13	0.33
Turn Count	1.7 (1.7)	1.5 (1.2)	-0.14	1.3 (0.8)	1.6 (1.3)	0.28	0.41
n (vocal blocks)	298	106		120	107		

Examining Harsh Parenting

- Explored the usage of two variables:
Average_SignalLevel & Peak_SignalLevel
- Average_SignalLevel: Average decibel level for the 5-minute
- Peak_SignalLevel: Highest dB Level for the 5 minute
 - Examined Peaks outside sample variation

Harsh Parenting: Preliminary Results

- Identified several segments per file
 - None indicated harsh parenting directed at child
- Self-report data: no maltreatment or harsh parenting risk
- Issues
 - Sample was of Young infants: crying -> dB
 - Loud environments (often music or older children)
 - Awareness of LENA recording
 - Harshness does not mean loudness

LENA Reliability

- Randomly Sampled Data to Validate:
 - Male, Female, Child, and Turn Count Variables
 - Self-report forms of those present in the home
- Sampled Vocal Block Data: Selected Conversations Generated by the Father
- Compared to self-report form

Data Validation: Results

- Main Concern: Accuracy of Father presence
 - Male Presence/Word Count Accurate 74% of the time
 - 90% of errors were due to TV/Radio Male Voices
 - Female Word Count Accurate 81% of the time
 - Child Vocalization Count highly accurate 97%
 - Turn Count Accurate 66% of the time
 - TV Errors (66%) + Discussions not directed at the child (33%)
- Accuracy of Self-Report LENA Form
 - 92% of the time sample was correctly noted

Future Use

- Further Examine Harsh or Neglectful Parenting
 - Examine extended periods of crying + adult silence
- Expanded sampling and analysis of the Vocal Block Data
- Developing More Specific self-report scales for validation

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