U.S. Department of Education

Washington, D.C. 20202-5335

IES Annual Performance Report
CFDA # 84.324A
PR/Award # R324A160139
Budget Period # 2
Report Type: Annual Performance

Table of Contents

U.S. Department of Education
Grant Performance Report
Cover Sheet (ED 524B)

Check only one box per
Program Office instructions.

[X] **Annual**   [ ] **Final**
Performance   **Performance**
Report   **Report**

General Information

1. PR/Award #: R324A160139   2. Grantee NCES ID#: 127741
(Block 5 of the Grant Award Notification - 11 Characters.)   *(See instructions. Up to 12 Characters.)*

3. Project Title: Special Education Research Program
(Enter the same title as on the approved application.)

4. Grantee Name: UNIVERSITY OF NORTHERN COLORADO
(Block 1 of the Grant Award Notification.)

5. Grantee Address:
(See instructions.)

Street: 501 20TH ST

City: GREELEY

State: CO Zip: 80639 Zip+4: 6900

6. Project Director:
(See instructions.)

First Name:Kay   Last Name:Ferrell   Title:Research Professor

Phone #: 9703511653   Fax #: 9703511934   Email Address: kay.ferrell@unco.edu

Reporting Period Information *(See instructions.)*

7. Reporting Period: From: 03/01/2017 To: 02/28/2018
(mm/dd/yyyy)

Budget Expenditures *(To be completed by your Business Office. See instructions. Also see Section B.)*

8. Budget Expenditures:

	Federal Grant Funds	**Non-Federal Funds** *(Match/Cost Share)*
a. Previous Budget Period	286,452	0
b. Current Budget Period	433,252	0
c. Entire Project Period *(For Final Performance Reports only)*		

Indirect Cost Information *(To be completed by your Business Office. See instructions.)*

9. Indirect Costs

a.   Are you claiming indirect costs under this grant? If yes, please indicate which of the following applies to your grant?   ● Yes ○ No

b.   The grantee has an Indirect Cost Rate Agreement approved by the Federal Government: ● Yes ○ No

The period covered by the Indirect Cost Rate Agreement is : From: 07/01/2017 To:06/30/2018 (mm/dd/yyyy)

The approving Federal agency is :   ○ ED ● Other   *(Please specify)*:Health & Human Services

The Indirect Cost Rate is : 38.00 %

Type of Rate *(For Final Performance Reports Only)*:   ○ Provisional ○ Final ○ Other   *(Please specify)*:

c.   The grantee is not a State, local government, or Indian tribe, and is using the de minimus rate of 10% of modified total direct costs (MTDC) in compliance with 2 CFR 200.414(f)   ○ Yes ○ No

d.   The grantee is funded under a Restricted Rate Program and is you using a restricted indirect cost rate that either :

○ Is included in your approved Indirect Cost Rate Agreement ● Complies with 34 CFR 76.564(c)(2)?

e.   The grantee is funded under a Training Rate Program and:

○ Is recovering indirect cost using 8 percent of MTDC in compliance with 34 CFR 75.562(c)(2)

○ Is recovering indirect costs using its actual negotiated indirect cost rate

Human Subjects (Annual Institutional Review Board (IRB) Certification) *(See instructions.)*

10. Is the annual certification of Institutional Review Board (IRB) approval attached? ○ Yes ○ No ● N/A

Performance Measures Status and Certification *(See instructions.)*   Page 4

11. Performance Measures Status

      a. Are complete data on performance measures for the current budget period included in the Project Status Chart? ● Yes ○ No

      b. If no, when will the data be available and submitted to the Department? (mm/dd/yyyy)

12. By signing this report, I certify to the best of my knowledge and belief that the report is true, complete, and accurate and the expenditures, disbursements, and cash receipts are for the purposes and objectives set forth in the terms and conditions of the Federal award. I am aware that any false, fictitious, or fraudulent information, or the omission of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (U.S. Code Title 18, Section 1001 and Title 31, Sections 3729-3730 and 3801-33812).Furthermore, to the best of my knowledge and belief, all data in this performance report are true, complete, and correct and the report fully discloses all known weaknesses concerning the accuracy, reliability, and completeness of data reported.

Name of Authorized Representative: Robert P Houser	Title: AVP for Research/Exec. Dir., OSP
Signature:	Date:

Grant Performance Report (ED 524B) Executive Summary Attachment:
Title : Executive Summary File : **R324A160139_Executive_Summary.pdf**

An Intervention for Infants and Toddlers with Visual Impairment:
Independence Through the Mealtime Routines Model
R324A160139

Executive Summary of the Annual Report
Second Reporting Period (3/1/2017 – 2/28/2018)

This Institute of Education Sciences performance report documents months 9-20 (of 36 total) of a project examining independent eating skills of infants with visual impairment. The primary goal of the Mealtime Routines for Visual Impairment (MRVI) Intervention Project is to create a fully developed intervention that will assist Teachers of Students with Visual Impairment in Early Intervention (TSVI-EIs) to work with families in supporting infants and toddlers with visual impairment in mealtime independence. At the completion of this project we will provide evidence of the usability, feasibility, fidelity of implementation, and promise of the MRVI Intervention.

Accomplishments. Studies One and Two were completed during the last performance period. At the time of this report, project staff have accomplished all benchmarks for Studies Three and Four. All but one benchmark for Study Five, the Pilot Study, have been achieved, and Study Five is currently being implemented.

Study Three examined the effects of individualized coaching on the implementation of the MRVI Intervention. Results were somewhat mixed, but in summary found no significant difference between Coached and Non-Coached TSVIs in how they delivered the MRVI Intervention. Study Four looked at the impact of the MRVI Intervention on Caregiver and Child behaviors; again, no significant difference was apparent for TSVI-EI—Caregiver dyads regardless of whether or not individualized coaching was provided to the TSVI-EIs. In general, both Caregivers and children made progress in independent eating and nutritious food selections.

Informed by the results of Studies Three and Four and more familiar with the impact of such intensive research in the home environment, revisions were made to the MRVI Intervention iteratively throughout the past year. These changes were incorporated into Study Five, which began in January 2018 with training of 7 TSVI-EIs in the Experimental Group. An additional 7 TSVI-EIs were recruited for the Business-As-Usual Group, and all TSVI-EIs began collecting data in January 2018.

Products. Publications have not been submitted at this time, although several posters have been accepted. Additional proposals for presentations have been submitted. The Project includes various assessments created for data collection that are detailed in the report.

Changes/Problems. While the project is on task and within its timelines, we have been challenged by the extended illness of the Project Coordinator. All staff and consultants have voluntarily taken on extra responsibilities as a result. While Studies Three and Four were hampered by the amount of missing data, we instituted a new procedure in Study Five that issues stipends to Caregivers each month, IF all data elements have been submitted. The project anticipates no problems in meeting future performance objectives.

Project Narrative - Additional Information

Title : Additional Information
Attachment:

File :
1   _1_Studies_3_4_Interobserver_Agreement.pdf
2   _2_MRVI_Statistical_Report_2017Jan_June.pdf
3   _3_MRVI_Statistical_Report_2017Jan_Dec.pdf
4   _4_Study_4_BEET_IT_Scoring_Spreadsheet.pdf
5   _5_Study_5_Fidelity_CaregiverChild.pdf
6   _6_Study_5_CaregiverChild_Mealtime_Behaviors.pdf
7   _7_MRVI_Intervention_CPRS_Supplemental_Analysis.pdf
8   _8_MEISR_Analysis.pdf
9   _9_EDPA_Final_Results_Jan_Dec_2017.pdf
10   _10_Study_5_ExperimentalGroup_Video_Protocol.pdf
11   _11_Study_5_B_A_U_Group_Video_Protocol.pdf
12   _12_WREIC_Feedback.pdf
13   _13_FNCE_MRVI_Presentation_2017.pdf
14   _14_MRVI_final_poster_Ferrell.pdf
15   _15_Smyth_CRIEI_PIJposter_Dewald.pdf
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R324A160139

MRVI Intervention Project
Inter-Observer Agreement Results, Studies 3 4

Assessment	Initial Agreement	Baseline	Maintenance								
			February	March	April	May	June	July	August	September	October
Coaching Practices Rating Scale	91.0%	100.0%	82.1%	92.9%	96.4%	85.7%	89.3%	82.1%	82.1%	92.9%	92.9%
Erhardt Developmental Prehension Assessment	100.0%	88.8%	85.1%	82.1%	97.0%	97.0%	95.9%	86.6%	86.2%	83.6%	81.3%
Family Centered Practices Checklist	86.3%	88.2%	88.2%	94.1%	97.1%	100.0%	94.1%	88.2%	88.2%	100.0%	29.4%
Implementation Fidelity	93.3%	96.4%	96.4%	98.8%	99.4%	85.5%	In May 2017, two videos were collected, requiring measurements (below).				
CAREGIVER Fidelity						99.2%	93.9%	96.5%	97.0%	95.0%	97.2%
TSVI Fidelity						84.9%	84.9%	97.0%	92.4%	98.0%	96.2%
MEISR	91.1%	88.5%	89.6%	83.3%	82.3%	79.2%	79.2%	83.3%	79.2%	83.3%	95.8%
MRVI Mealtime Communication Inventory	100.0%	75.0%	100.0%	100.0%	100.0%	92.5%	81.3%	97.9%	100.0%	100.0%	100.0%
Nursing Child Assessment Feeding Scale	95.0%	93.6%	95.3%	99.3%	96.1%	93.4%	85.5%	95.2%	94.3%	96.9%	89.5%
Parent Confidence and Efficacy Scale	96.0%	100.0%	87.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	87.5%	50.0%

University of Northern Colorado   3/30/2018

MRVI Intervention
Statistical Analysis Report

Contents

STUDY THREE

These are the three Study Three research questions:

1. Are there differences between coaching and non-coaching groups in the challenges and successes encountered during the implementation of the MRVI Intervention?

2. Are there differences between coaching and non-coaching groups in the consistency with which TSVI-EI Participants use family centered coaching practices to establish fidelity during the MRVI Intervention?

3. Are there differences between coaching and non-coaching groups in the fidelity with which TSVI-EIs use the MRVI Intervention practices and online resource tools?

A rating scale and three checklists were used to assess differences between coaching and non-coaching groups as delineated in the Study Three research questions. These assessments were the:

1. Coaching Practices Rating Scale for Assessing Adherence to Evidence-Based Early Childhood Intervention Practices (Authors: Dathan Rush & M'Lisa Shelden)

2. Family-Centered Practices Checklist (Authors: Linda L. Wilson & Carl J. Dunst)

3. MRVI Intervention Implementation Fidelity Checklists (Author: Catherine Smyth)
   a. Video Observation (Version 01)
   b. For TSVI-EIs

This report section summarizes analysis of data generated from the administration of these assessments.

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Study Three: Coaching Practices Rating Scale

The fourteen-item Coaching Practices Rating Scale for Assessing Adherence to Evidence-Based Early Childhood Intervention Practices (CPRS) was used to determine the extent to which practitioners used evidence-based coaching practices when supporting a learner in refining existing skills and developing new ones. CPRS item scores were assigned by observation of videos. For this analysis, responses were coded Yes = 1 or No = 0. The total possible score was 14.

There were 52 observations where CPRS scores were assigned; 24 were coaching groups and 28 were non-coaching groups. Numbers of observations for the time period January through June 2017 were: January (11), February (9), March (8), April (10), May (8) and June (6). Numbers of observations within coaching and non-coaching groups identified by children's codes are displayed in Table 1.

Table 1: Numbers of Observations when CPRS Items were scored

	Coaching Group							Non-Coaching Group					
Child's ID Code:	1	1b	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	4	1	5	6	6	1	1	6	2	5	4	5	6

Frequency distributions of total scores for coaching and non-coaching groups for the six months (January – June 2017) are displayed as bar charts in Figure 1. The skewness of the coaching group distribution of scores (the mean minus the standard deviation was negative) raised concerns about using the t-test even though the t-test is robust with respect to normality. The Shapiro-Wilk test was used to examine whether the pooled (coaching and non-coaching combined) data set conformed to a normal distribution. The 52 CPRS scores were not normally distributed (Shapiro-Wilk Normality Test W-statistic = 0.8913 and P(W) = 0.0002). Based on the folded F-test the two samples did come from populations with equal variances (F = 1.04, p < 0.4650). The concern was that relatively small sample sizes, difference in skewness of the two data sets and non-normality might reduce the power of the t-test to detect a difference in means for the two groups so the parametric t-test was used to test differences in mean scores and the non-parametric median test was used to test differences in median scores.

Figure 1: Bar Charts of CPRS Total Scores for Coaching and Non-Coaching Groups
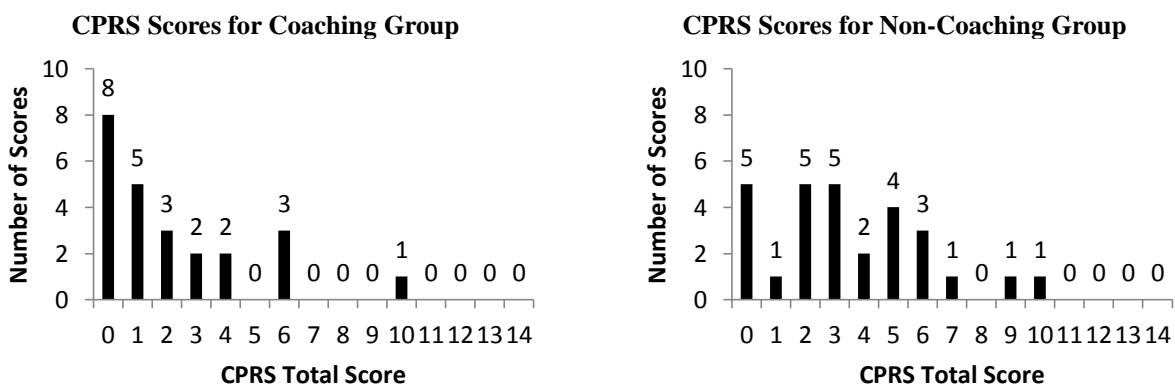
Both the two-sample t-test and median test were used to test for differences in coaching group and non-coaching group CPRS total scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference < > 0. Median scores differed significantly (Chi-square = 5.74, p < 0.0166) but mean scores did not (t = 1.75, p < 0.0858). Table 2 displays the number of CPRS scores (N), mean score ($\bar{x}$), standard deviation (SD), median score (MD), t-statistic (t), Chi-square (X^2) and p-value (p).

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Table 2: Statistics for Coaching and Non-Coaching CPRS Total Scores

Coaching				Non-Coaching				X^2	p	t	p
N	x̄	SD	MD	N	x̄	SD	MD				
24	2.21	2.62	1	28	3.50	2.67	3	5.74	0.0166	1.75	0.0858

> **It is evident by visual analysis and statistical analysis that the non-coaching group produced higher CPRS scores than the coaching group: Practitioners in the non-coaching group used more evidence-based coaching practices than practitioners in the coaching group.**

Study Three: Family-Centered Practices Checklist

The seventeen-item Family-Centered Practices (FCPC) checklist is designed to determine the extent to which a practitioner uses family-centered helpgiving practices. Integral weights (0, 1 and 2) were assigned for statistical analysis purposes: 0 (practice not used, opportunity missed), 1(practice was partially, sometimes done), and 2 (yes, practice was used). The checklist option "no opportunity to observe the practice" was reported as missing data in the analysis. Total possible scores for each of the FCPC subscales were: Interpersonal Skills (6), Asset-Based Attitudes (8), Family Choice and Action (10), and Practitioner Responsiveness (10).

There were 52 observations where scores were assigned; 24 were in the coaching group and 28 were in the non-coaching group. Numbers of observations for the time period January through June of 2017 were: January (11), February (9), March (8), April (10), May (8) and June (6). Numbers of observations within coaching and non-coaching groups identified by children's codes are displayed in Table 3.

Table 3: Numbers of Observations when FCPC Items were scored

	Coaching Group						Non-Coaching Group					
Child's ID Code:	1	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	5	5	6	6	1	1	6	2	5	4	5	6

Frequency distributions of total scores for coaching and non-coaching groups for the six months (January – June 2017) are displayed in eight bar charts in Figure 2.

Figure 2: Bar Charts of FCBC Subscale Scores for Coaching and Non-Coaching Groups

3
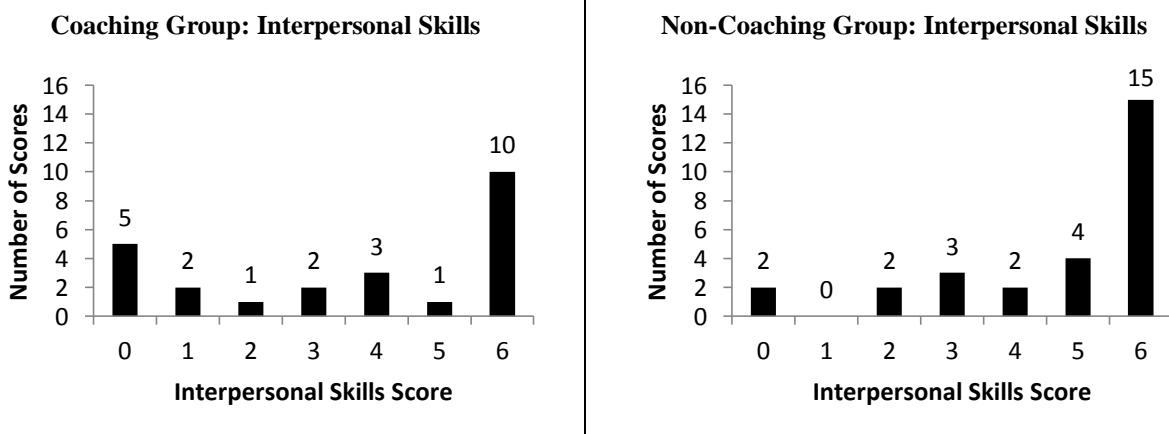
Coaching Group: Asset-Based Attitudes
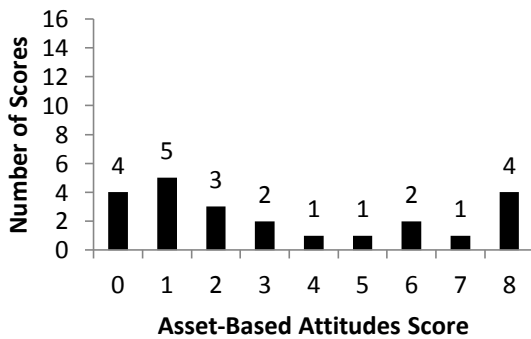
Non-Coaching Group: Asset-Based Attitudes
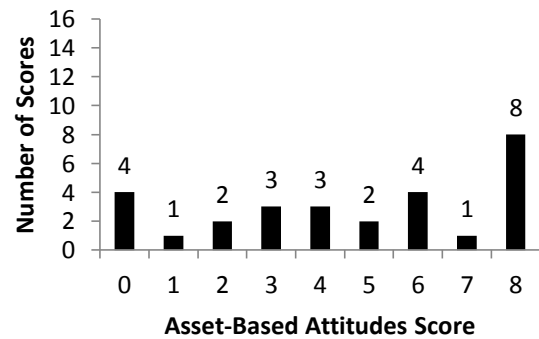
Coaching Group: Family Choice and Action
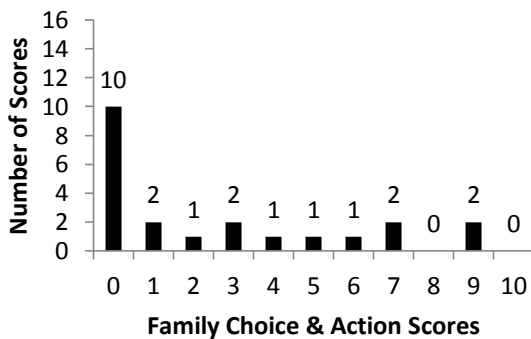
Non-Coaching Group: Family Choice and Action
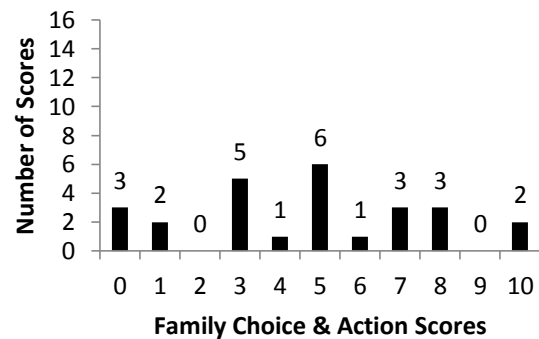
Coaching Group: Practitioner Responsiveness
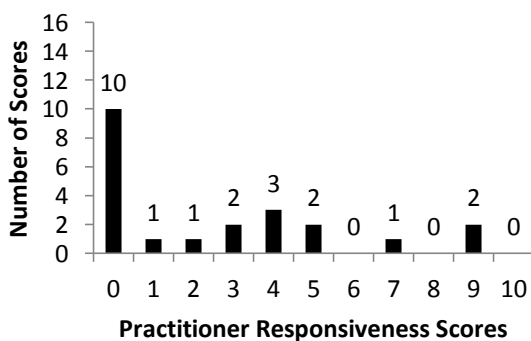
Non-Coaching Group: Practitioner Responsiveness
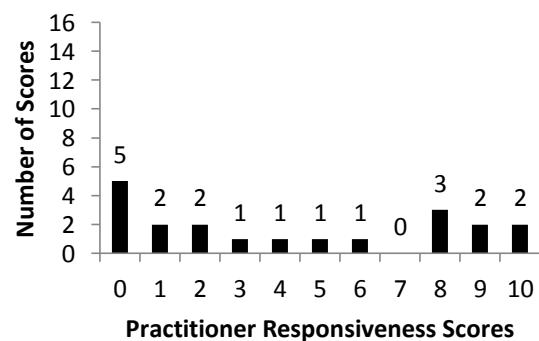
For reasons discussed in the previous report section (analysis of CPRS) the t-test and median test were used to test for mean/median differences in coaching group and non-coaching group FCPS sub-scale scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference < > 0. Family Choice and Action median scores ($X^2 = 7.06$, $p < 0.0079$) and mean scores ($t = 2.38$, $p < 0.0217$) differed significantly but did not differ significantly for the other three subscales. Non-coaching group median and mean scores for this subscale were greater than coaching group median and mean scores.

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Table 4 displays the number of FCPC subscale scores (N), mean score ($\bar{x}$), standard deviation (SD), median score (MD), t-statistic (t), Chi-square (X^2) and p-value (p). In the observations where "NA, no opportunity to observe the practice" for all subscale items, the total number of scores (N) is less than the total number of observations.

Table 4: Statistics for Coaching and Non-Coaching FCPC Sub-Scale Scores

FCPC Subscale	Coaching				Non-Coaching				X^2	p	t	p
	N	$\bar{x}$	SD	MD	N	$\bar{x}$	SD	MD				
Interpersonal Skills	24	3.62	2.48	4	28	4.68	1.87	6	1.71	0.1914	1.74	0.0873
Asset-Based Attitudes	23	3.35	2.98	2	28	4.68	2.89	5	2.62	0.1058	1.61	0.1132
Family Choice and Action	22	2.59	3.19	1	26	4.69	2.94	5	7.06	0.0079	2.38	0.0217
Practitioner Responsiveness	22	2.55	3.00	1.5	20	4.30	3.84	3	0.38	0.5366	1.66	0.1053

> **The non-coaching group used more helpgiving family choice and action practices than the coaching group. Helpgiving practices associated with interpersonal skills, asset-based attitudes, and practitioner responsiveness were not significantly different in the coaching and non-coaching groups.**

Study Three: MRVI Intervention Implementation Fidelity Checklists

Two versions of the Implementation Fidelity Checklist were developed by MRVI researchers during the time period January through June 2017. The first version of the form was administered for the time period February through May 2017. The second version of the form was administered during May and June 2017.

MRVI Intervention Implementation Fidelity Checklist: Version 01

The five process indicators for this (video observation) checklist were:
1. Number of Mealtime Routines Instructional practices observed
2. Number of times the MRVI Tablet-based resources were used
3. Number of positive mealtime routine caregiver/child interactions
4. Number of negative mealtime routine experiences

There were 29 observations where scores were assigned; 13 were coaching groups and 16 were non-coaching groups. Numbers of observations for the time period January through June of 2017 were: January (0), February (9), March (7), April (10), May (3) and June (0). Numbers of observations within coaching and non-coaching groups identified by children's codes are displayed in Table 5.

Table 5: Numbers of Observations when Version 01 of the MRVI Fidelity Checklist was scored

	Coaching Group						Non-Coaching Group					
Child's ID Code:	1	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	3	3	2	4	0	1	3	1	4	2	3	3

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Mean numbers of process indicators observed from January through June 2017 are displayed in Figure 3. It is apparent from viewing this display that on average the coaching group had fewer numbers of observed mealtime routines instructional practices, fewer positive mealtime routine caregiver/child interactions and slightly more use of MRVI tablet-based resources. Means indicate the coaching group had significantly fewer negative mealtime routine experiences than the non-coaching group.

Figure 3: Mean Numbers of Observed Process Indicators for Coaching and Non-Coaching Groups
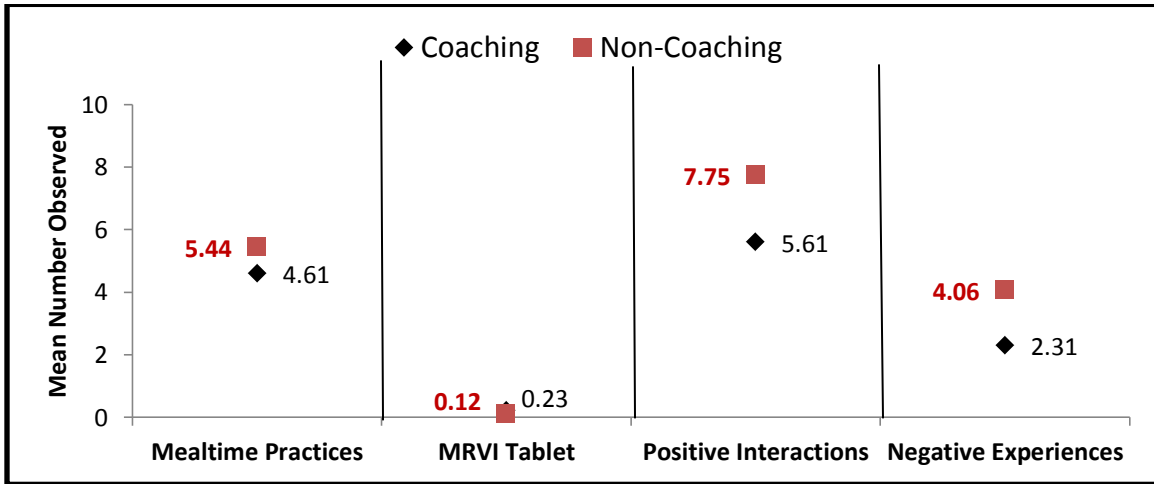
The t-test and median test were used to test for mean/median differences in coaching group and non-coaching group process indicator scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference < > 0. Differences in mean/median scores for the "number of times the MRVI tablet-based resources were used" were similar (most usage numbers were zero). The data for this process indicator are displayed here.

	Number of Times Used		
	Not at all (0)	Once (1)	Twice (2)
Coaching	11	1	1
Non-Coaching	14	2	0

Median scores differed significantly for "number of negative mealtime routine experiences" with the non-coaching group observed to have more negative experiences ($X^2 = 5.49$, $p < .0191$) but mean scores did not differ significantly ($t = 1.11$, $p < 0.2757$) even though on average there were more negative experiences observed in the non-coaching group (~4 per observation) than in the coaching group (~2 per observation). The bar charts in Figure 4 display the distributions of the coaching and non-coaching scores for this indicator.

Figure 4: Coaching and Non-Coaching Scores for "Negative Mealtime Routine Experiences"

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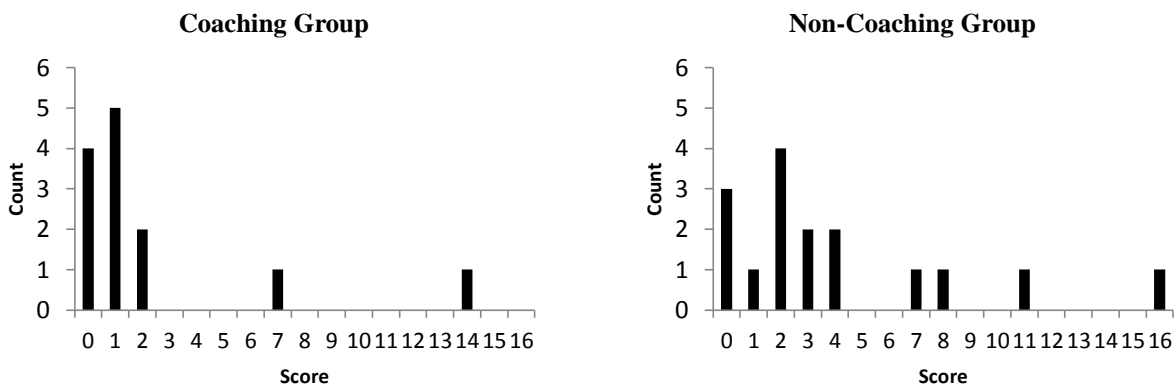
Table 6 displays the number of scores (N), mean score ($\bar{x}$), standard deviation (SD), median score (MD), t-statistic (t), Chi-square (X^2) and p-value (p).

Table 6: Statistics for Coaching and Non-Coaching Indicators of MRVI Implementation Fidelity

Number of:	Coaching				Non-Coaching				X^2	p	t	p
	N	$\bar{x}$	SD	MD	N	$\bar{x}$	SD	MD				
Mealtime Routines Instructional Practices Observed	13	4.61	4.48	4	16	5.44	2.99	5	1.39	0.2391	0.59	0.5596
Positive mealtime caregiver/child interactions	13	5.61	4.03	5	16	7.75	8.92	4	0.00	1.000	0.86	0.4014
Negative mealtime routine experiences.	13	2.31	3.97	1	16	4.06	4.42	2	5.49	0.0191	1.11	0.2757

> **Coaching contributed to fewer negative mealtime routine experiences but did not contribute significantly to the number of mealtime routines instructional practices observed or to the number of positive mealtime caregiver/child interactions. There was very little sharing of MRVI tablet-based resources in both coaching and non-coaching groups.**

MRVI Intervention Implementation Fidelity Checklist (TSVI-EIs)

The five process indicators for this (TSVI-EIs) checklist were:

1. Number of Mealtime Routines Instructional practices coached
2. Number of times the MRVI tablet-based resources were shared
3. Number of TSVI-EI and caregiver discussions
4. Number of missed opportunities for MRVI intervention

There were 10 observations (4 coaching and 6 non-coaching) where scores were assigned. Numbers of observations for the time period January through June of 2017 were: January (0), February (0), March (0), April (0), May (5) and June (5). Numbers of observations within coaching and non-coaching groups identified by children's codes are displayed in Table 7. Note that "1b" replaced "1" in the study.

Table 7: Numbers of Observations when the MRVI Fidelity Checklist (TSVI-EIs) was scored

	Coaching Group						Non-Coaching Group					
Child's ID Code:	1/1b	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	2	1	0	1	0	0	2	0	0	1	1	2

These data were tested for significant differences relevant to the process indicators for this checklist. Statistics are displayed in Table 8. These very small data sets did not lend themselves to meaningful median test analysis. The t-test was used to test for mean differences in coaching group and non-coaching group IRVI Intervention Implementation Fidelity Checklist (for TSVI-EIs) process indicator scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference < > 0.

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Mean scores differed significantly for "number of times the MRVI table-based resources were shared" with more of these in the coaching group than in the non-coaching group (t = 2.42, p < 0.0421). Based on this small data set it appears that there were more TSVI-EI and caregiver discussions in the coaching group than in the non-coaching group (t = 2.31, p < 0.0609).

Table 8: Statistics for Non/Coaching Indicators of Implementation Fidelity (TSVI-EIs)

Process Indicators	Coaching				Non-Coaching				t	p
	N	x̄	SD	MD	N	x̄	SD	MD		
Number of Mealtime Routines Instructional Practices coached.	4	5.25	2.36	6	6	5.17	3.76	4.5	0.04	0.9698
Number of times the MRVI tablet-based resources were shared.	4	2.25	1.71	2.5	6	0.33	0.82	0	2.42	0.0421
Number of TSVI-EI and caregiver discussions.	4	5.75	0.50	6	6	3.83	1.94	3.5	2.31	0.0609
Number of missed opportunities for MRVI intervention	4	0.25	0.50	0	6	2.17	2.56	2	1.78	0.1290

> **There was significantly more sharing of MRVI tablet-based resources in the coaching group than in the non-coaching group. There were more TSVI-EI and caregiver discussions in the coaching group. There was no difference in the coaching and non-coaching groups in the number of mealtime routines instructional practices coached. There were more missed opportunities for MRVI intervention in the non-coaching group.**

STUDY FOUR

Results of data analyses are reported in this report section for the Study Four research question: Do parents/caregivers demonstrate a change in their level of confidence at mealtimes with their infants/toddlers after participating in the coached and non-coached MRVI intervention?

Two rating scales, a checklist and an inventory were used to assess differences between coached and non-coached groups as delineated in the Study Four research question. These assessments were the:
1. The MRVI Intervention Implementation Fidelity Checklist for Caregivers (MRVI Intervention Project)
2. Parenting Confidence and Efficacy Scale (Winterberry Press)
3. MRVI Mealtime Communication Inventory (MRVI Intervention Project)
4. NCAST Feeding Scale (NCAST Programs)

This report section summarizes analysis of data generated from the administration of these assessments.

Study 4: MRVI Intervention Implementation Fidelity Checklist (Caregivers)

The three process indicators for this checklist for caregivers were:
1. Number of Mealtime Routines Instructional practices observed
2. Number of positive mealtime routine caregiver/child interactions
3. Number of negative mealtime routine experiences

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There were 12 observations (5 coached and 7 not coached) where scores were assigned. Numbers of observations for the time period January through June of 2017 were: January (0), February (0), March (0), April (0), May (5) and June (7). Numbers of observations within coached and non-coached groups identified by children's codes are displayed in Table 9.

Table 9: Numbers of Observations when the MRVI Fidelity Checklist (Caregiver) was scored

	Coached Group						**Non-Coached Group**					
Child's ID Code:	**1b**	**3**	**4**	**5**	**6**	**7**	**2**	**8**	**9**	**10**	**11**	**12**
Number of Observations:	1	1	2	1	0	0	2	0	1	1	1	2

These data were tested for significant differences in means relevant to the process indicators for this checklist. Statistics are displayed in Table 10.

Table 10: Statistics for Coached and Non-Coached Implementation Fidelity Indicators (Caregiver)

Process Indicators	**Coached Group**				**Non-Coached Group**				**t**	**p**
	N	**x̄**	**SD**	**MD**	**N**	**x̄**	**SD**	**MD**		
Number of Mealtime Routines Instructional Practices Observed.	5	7.80	3.03	8	7	8.29	3.45	9	0.25	0.8060
Number of positive mealtime caregiver/child interactions.	5	12.20	6.30	10	7	8.29	4.82	8	1.22	0.2490
Number of negative mealtime routine experiences.	5	4.20	0.84	4	7	5.29	3.64	4	0.65	0.5349

The number of mealtime routines instructional practices observed was approximately the same in the coached and non-coached groups. The number of mealtime caregiver/child interactions and negative mealtime routine experiences were also about the same.

Study Four: Parenting Confidence and Efficacy Scale

The Parenting Confidence and Efficacy Scale (PCES) includes four items which were rated from 1 to 5 (1 low and 5 high) during the observation. The scale items based on observations of the entire family visit are: Caregiver Effort, Caregiver Strategizing, Caregiver Emotional Regulations and Caregiver Pride/Gratification.

For January through June 2017 there were 53 scored observations; 25 were observations of coached groups and 28 were observations of non-coached groups. Numbers of observations for the time period January through June of 2017 were: January (11), February (9), March (8), April (10), May (8) and June (6). Numbers of observations within coached and non-coached groups identified by children's codes are displayed in Table 11.

Table 11: Numbers of Observations when PCES Items were rated

	Coached Group							**Non-Coached Group**					
Child's ID Code:	**1**	**1b**	**3**	**4**	**5**	**6**	**7**	**2**	**8**	**9**	**10**	**11**	**12**
Number of Observations:	5	1	5	6	6	1	1	5	2	6	4	5	6

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Frequency distributions of scale item total scores for coached and non-coached groups for the first six months of 2017 (January – June 2017) are displayed in Table 12.

Table 12: Distributions of PCES Scale Items Ratings for Coached and Non-Coached Groups

| Scale Items | Number of Recorded Ratings | | | | | | | | | |
| | Coached Group (N = 25) | | | | | Non-Coached Group (N = 28) | | | | |
	1 = low	2	3	4	5 = high	1 = low	2	3	4	5 = high
Caregiver Effort		1	10	14		1	6	8	13	
Caregiver Strategizing		9	4	12		2	10	7	9	
Caregiver Emotional Regulation		1	8	16			6	6	16	
Caregiver Pride/Gratification		6	11	8		1	6	12	9	

The two-sample t-test was used to test for mean differences in coached group and non-coached group scale item ratings at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference $<>$ 0. Differences in mean scores were not statistically significant. The Median Test could not be used because there were too many ties with the median.

Table 13 displays number of PCES scores (N), mean score ($\bar{x}$), standard deviation (SD), median score (MD), t-statistic (t) and p-value (p).

Table 13: Statistics for Coached and Non-Coached Groups PCES Item Scores

| PCES Items | Coached Group | | | | Non-Coached Group | | | | t | p |
	N	$\bar{x}$	SD	MD	N	$\bar{x}$	SD	MD		
Caregiver Effort	25	3.52	0.59	4	28	3.18	0.90	3	1.65	0.1063
Caregiver Strategizing	25	3.12	0.93	3	28	2.82	0.98	3	1.13	0.2624
Caregiver Emotional Regulation	25	3.60	0.58	4	28	3.36	0.83	4	1.25	0.2171
Caregiver Pride/Gratification	25	3.08	0.76	3	28	3.04	0.84	3	0.20	0.8418

> **Coached and non-coached groups did not differ significant in caregiver effort, strategizing, emotional regulation or pride/gratification.**

Study Four: MRVI Mealtime Communication Inventory

The MRVI Mealtime Communication Measure (MCM) is an observation checklist of three measures: (1) Preparing for the Mealtime, (2) Mealtime and (3) Ending the Mealtime. The highest possible total scores for each of these are: Preparing for the Mealtime (7), Mealtime (7) and Ending the Mealtime (6).

For January through June 2017 there were 53 scored observations; 26 were observations of coached groups and 27 were observations of non-coached groups. Numbers of observations for the time period January through June of 2017 were: January (11), February (9), March (8), April (10), May (8) and June (7). Numbers of observations within coached and non-coached groups identified by children's codes are displayed in Table 14.

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Table 14: Numbers of Observations when MCM Items were rated

	Coached Group						Non-Coached Group					
Child's ID Code:	1	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	7	5	6	6	1	1	5	2	5	4	5	6

Figure 5: Bar Charts of MCM Scores
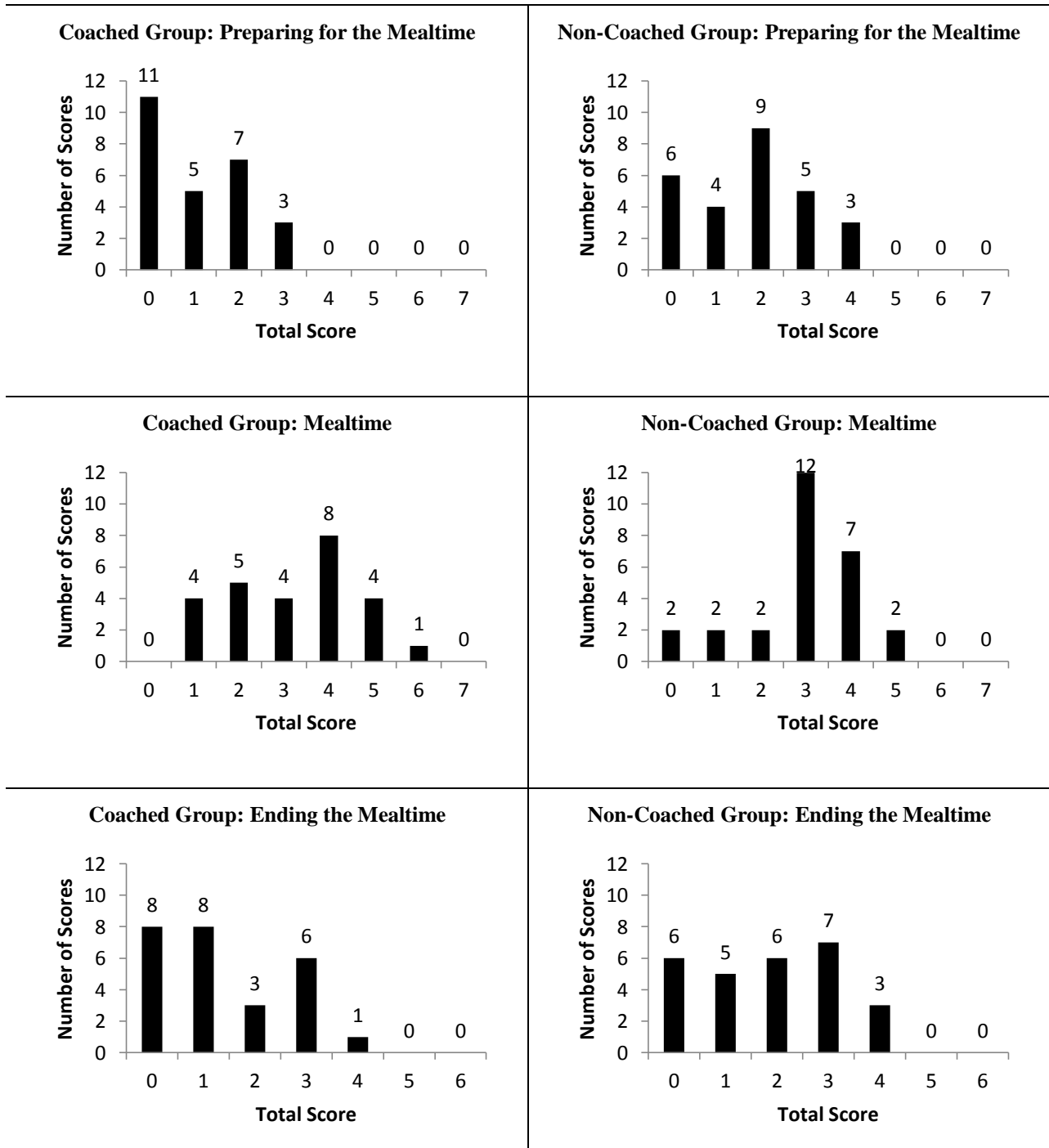
Coached Group: Preparing for the Mealtime

Non-Coached Group: Preparing for the Mealtime

Coached Group: Mealtime

Non-Coached Group: Mealtime

Coached Group: Ending the Mealtime

Non-Coached Group: Ending the Mealtime

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The two-sample t-test was used to test for mean differences in coached group and non-coached group scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference < > 0. None of t-statistics were significant. Table 15 displays the number of scores (N), mean score ($\bar{x}$), standard deviation (SD), median score (MD), t-statistic (t) and p-value (p). The "Preparing for the Mealtime" mean score was significantly greater for the non-coached group than for the coached group (t = 2.3, p < 0.0301). Mean scores for Mealtime and Ending the Mealtime were not significantly different for the two groups.

Table 15: Statistics for Coached and Non-Coached Groups MCM Scores

Mealtime Measures	Coached Group				Non-Coached Group				X^2	p	t	p
	N	$\bar{x}$	SD	MD	N	$\bar{x}$	SD	MD				
Preparing	26	1.08	1.09	1	27	1.81	1.30	2	3.62	0.0566	2.23	0.0301
During	26	3.23	1.45	3.5	27	2.96	1.29	3	0.00	0.9559	0.71	0.4797
Ending	26	1.38	1.27	1	27	1.85	1.35	2	1.28	0.2573	1.30	0.2002

> **Communication between caregiver and child did not differ significantly for coached and non-coached groups during mealtime and ending the mealtime. There was better communication between caregiver and child during preparation for mealtime in the non-coached group than in the coached group.**

Study Four: NCAST Feeding Scale

The NCAST Feeding Scale assesses caregiver/child interaction with Yes/No responses to 76 items. The score was the total number of yes answers. Total possible scores for each of the subscales were Sensitivity to Cues (16), Response to Child's Distress (11), Social-Emotional Growth Fostering (14), Cognitive Growth Fostering (9), Clarity of Cues (15), and Responsiveness to Caregiver (11).

For January through June 2017 there were 54 scored observations; 23 were coached group observations and 31 were non-coached group observations. Numbers of observations for the time period January through June of 2017 were: January (11), February (11), March (8), April (10), May (8) and June (6). Numbers of observations within coached and non-coached groups identified by children's codes are displayed in Table 16.

Table 16: Numbers of Observations when NCAST was completed

	Coached Group						Non-Coached Group					
Child's ID Code:	1	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	5	5	6	5	1	1	6	2	6	4	6	7

The two-sample t-test was used to test for mean differences in coached group and non-coached group total subscale scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference < > 0. None of the six mean scores for the coached and non-coached groups were significantly different. Although median test results are not displayed they were calculated and none of the median scores were significantly different. Table 17 displays number of scores (N), mean score ($\bar{x}$), standard deviation (SD), t-statistic (t) and p-value (p).

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Table 17: Statistics for NCAST Sub-Scale Scores for Coached and Non-Coached Groups

Description (Total Possible Score)	Coached Group			Non-Coached Group			t	p
	N	x̄	SD	N	x̄	SD		
Sensitivity to Cues	23	12.56	1.90	31	12.90	1.85	0.66	0.5148
Response to Child's Distress	23	8.83	2.35	31	8.71	1.72	0.21	0.8340
Social-Emotional Growth Fostering	23	11.65	2.23	31	11.42	2.53	0.35	0.7264
Cognitive Growth Fostering	23	6.56	2.31	31	7.19	1.51	1.13	0.2640
Clarity of Cues (	23	12.13	2.14	31	12.71	2.04	1.01	0.3163
Responsiveness to Caregiver	23	6.39	2.21	31	7.10	1.97	1.23	0.2225

> **There was no difference in sensitivity to cues, response to child's distress, social-emotional growth fostering, cognitive growth fostering, clarity of cutes or responsiveness to caregiver between coached and non-coached groups.**

NCAST Item Analysis

Item analysis was of interest because NCAST mean scores for the coached and non-coached groups were not significantly different. Numbers of yes and no responses for each of the 76 items by month (January, February, March, April, May and June 2017) and the total number of yes and no responses for each item for the time frame January-June 2017 are displayed in the following tables.

Month	Item #1		Item #2		Item #3		Item #4		Item #5		Item #6	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
January	0	11	0	11	9	2	0	11	1	10	0	11
February	0	11	0	11	10	1	1	10	0	11	1	10
March	0	8	0	8	8	0	0	8	1	7	0	8
April	0	10	0	10	10	0	0	10	2	8	0	10
May	0	8	0	8	8	0	2	6	0	8	1	7
June	0	6	0	6	6	0	0	6	0	6	0	6
TOTAL	0	54	0	54	51	3	3	51	4	50	2	52
Percent	0%	100%	0%	100%	94%	6%	6%	94%	7%	93%	4%	96%

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Month	Item #7		Item #8		Item #9		Item #10		Item #11		Item #12	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
January	3	8	2	9	1	10	5	6	2	9	0	11
February	5	6	3	8	3	8	8	3	2	9	2	9
March	3	5	2	6	1	7	7	1	0	8	0	8
April	5	5	4	6	0	10	5	5	1	9	1	9
May	5	3	1	7	0	8	4	4	1	7	0	8
June	2	4	2	4	1	5	3	3	1	5	0	6
TOTAL	23	31	14	40	6	48	32	22	7	47	3	51
Percent	43%	57%	26%	74%	11%	89%	59%	41%	13%	87%	6%	94%

Month	Item #13		Item #14		Item #15		Item #16		Item #17		Item #18	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
January	0	11	1	10	0	11	0	11	1	10	6	5
February	1	10	5	6	0	11	1	10	0	11	9	2
March	1	7	3	5	0	8	1	7	1	7	6	2
April	1	9	5	5	2	8	3	7	2	8	4	6
May	0	8	2	6	0	8	0	8	0	8	4	4
June	1	5	3	3	0	6	0	6	0	6	4	2
TOTAL	4	50	19	35	2	52	5	49	4	50	33	21
Percent	7%	93%	35%	65%	4%	96%	9%	91%	7%	93%	61%	39%

Month	Item #19		Item #20		Item #21		Item #22		Item #23		Item #24	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
January	2	9	1	10	1	10	7	4	0	11	0	11
February	1	10	3	8	6	5	9	2	2	9	1	10
March	2	6	2	6	6	2	7	1	1	7	1	7
April	1	9	1	9	4	6	7	3	0	10	0	10
May	1	7	2	6	3	5	6	2	0	8	0	8
June	0	6	0	6	1	5	2	4	0	6	0	6
TOTAL	7	47	9	45	21	33	38	16	3	51	2	52
Percent	13%	87%	17%	83%	39%	61%	70%	30%	6%	94%	4%	96%

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Month	Item #25		Item #26		Item #27		Item #28		Item #29		Item #30	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
January	0	11	0	11	0	11	2	9	3	8	2	9
February	0	11	0	11	0	11	4	7	5	6	2	9
March	1	7	1	7	1	7	3	5	3	5	2	6
April	0	10	0	10	0	10	3	7	3	7	2	8
May	0	8	1	7	0	8	3	5	2	6	1	7
June	0	6	0	6	0	6	0	6	0	6	2	4
TOTAL	1	53	2	52	1	53	15	39	16	38	11	43
Percent	2%	98%	4%	96%	2%	98%	28%	72%	30%	70%	20%	80%

Month	Item #31		Item #32		Item #33		Item #34		Item #35		Item #36	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
January	2	9	5	6	3	8	4	7	1	10	1	10
February	1	10	5	6	1	10	4	7	1	10	0	11
March	1	7	3	5	1	7	2	6	1	7	0	8
April	1	9	6	4	0	10	4	6	0	10	1	9
May	0	8	4	4	1	7	4	4	0	8	0	8
June	1	5	2	4	2	4	2	4	1	5	1	5
TOTAL	6	48	25	29	8	46	20	34	4	50	3	51%
Percent	11%	89%	46%	54%	15%	85%	37%	63%	7%	93%	6%	94%

Month	Item #37		Item #38		Item #39		Item #40		Item #41		Item #42	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
January	0	11	2	9	1	10	0	11	0	11	5	6
February	4	7	2	9	1	10	0	11	0	11	1	10
March	1	7	1	7	0	8	0	8	0	8	1	7
April	2	8	3	7	0	10	0	10	1	9	2	8
May	4	4	1	7	0	8	0	8	0	8	1	7
June	1	5	1	5	1	5	0	6	0	6	0	6
TOTAL	12	42	10	44	3	51	0	54	1	53	10	44
Percent	22%	78%	18%	82%	6%	94%	0%	100%	2%	98%	18%	82%

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Month	Item #43		Item #44		Item #45		Item #46		Item #47		Item #48	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
January	3	8	1	10	5	6	5	6	2	9	3	8
February	1	10	1	10	5	6	8	3	4	7	4	7
March	2	6	0	8	1	7	5	3	1	7	2	6
April	2	8	0	10	2	8	6	4	0	10	2	8
May	1	7	0	8	2	6	5	3	1	7	2	6
June	0	6	1	5	3	3	4	2	1	5	1	5
TOTAL	9	45	3	51	18	36	33	21	9	45	14	40
Percent	17%	83%	6%	94%	33%	67%	61%	39%	17%	83%	26%	74%

Month	Item #49		Item #50		Item #51		Item #52		Item #53		Item #54	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
January	3	8	1	10	3	8	1	10	1	10	0	11
February	3	8	2	9	1	10	3	8	4	7	0	11
March	0	8	2	6	0	8	1	7	2	6	1	7
April	2	8	0	10	3	7	3	7	5	5	0	10
May	1	7	0	8	1	7	3	5	3	5	0	8
June	2	4	0	6	1	5	3	3	2	4	0	6
TOTAL	11	43	5	49	9	45	14	40	17	37	1	53
Percent	20%	80%	9%	91%	17%	83%	26%	74%	31%	69%	2%	98%

Month	Item #55		Item #56		Item #57		Item #58		Item #59		Item #60	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
January	0	11	0	11	0	11	0	11	3	8	2	9
February	0	11	1	10	0	11	0	11	3	8	1	10
March	1	7	2	6	1	7	0	8	2	6	0	8
April	1	9	0	10	0	10	1	9	2	8	0	10
May	0	8	0	8	1	7	0	8	1	7	0	8
June	0	6	1	5	0	6	0	6	2	4	0	6
TOTAL	2	52	4	50	2	52	1	53	13	41	3	51
Percent	4%	96%	7%	93%	4%	96%	2%	98%	24%	76%	6%	94%

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Month	Item #61 No	Yes	Item #62 No	Yes	Item #63 No	Yes	Item #64 No	Yes	Item #65 No	Yes	Item #66 No	Yes
January	2	9	1	10	3	8	0	11	0	11	2	9
February	3	8	4	7	7	4	3	8	0	11	1	10
March	0	8	3	5	5	3	3	5	0	8	0	8
April	3	7	1	9	8	2	3	7	0	10	0	10
May	2	6	1	7	6	2	3	5	0	8	0	8
June	1	5	3	3	4	2	2	4	0	6	0	6
TOTAL	11	43	13	41	33	21	14	40	0	54	3	51
Percent	20%	80%	24%	76%	61%	39%	26%	74%	0%	100%	6%	94%

Month	Item #67 No	Yes	Item #68 No	Yes	Item #69 No	Yes	Item #70 No	Yes	Item #71 No	Yes	Item #72 No	Yes
January	3	8	4	7	3	8	5	68	3	8	5	6
February	5	6	2	9	1	10	3	7	4	7	7	4
March	3	5	2	6	1	7	1	6	2	6	4	4
April	5	5	2	8	3	7	4	6	4	6	6	4
May	3	5	1	7	1	7	2	6	2	6	6	2
June	1	5	2	4	1	5	1	5	1	5	3	3
TOTAL	20	34	13	41	10	44	16	38	16	38	31	23
Percent	37%	63%	24%	76%	18%	82%	30%	70%	30%	70%	57%	43%

Month	Item #73 No	Yes	Item #74 No	Yes	Item #75 No	Yes	Item #76 No	Yes
January	6	5	1	10	11	0	4	7
February	7	4	4	7	11	0	3	8
March	7	1	3	5	8	0	1	7
April	3	7	3	7	10	0	4	6
May	6	2	2	6	8	0	2	6
June	3	3	3	3	6	0	2	4
TOTAL	32	22	16	38	54	0	16	38
Percent	59%	41%	30%	70%	100%	0%	30%	70%

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MRVI Intervention
Statistical Analysis Report for January through December 2017

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Contents

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STUDY THREE

These are the three Study Three research questions:
1. Are there differences between coaching and non-coaching groups in the challenges and successes encountered during the implementation of the MRVI Intervention?
2. Are there differences between coaching and non-coaching groups in the consistency with which TSVI-EI Participants use family centered coaching practices to establish fidelity during the MRVI Intervention?
3. Are there differences between coaching and non-coaching groups in the fidelity with which TSVI-EIs use the MRVI Intervention practices and online resource tools?

A rating scale and four checklists were used to assess differences between coaching and non-coaching groups as delineated in the Study Three research questions. These assessments were the:
1. Coaching Practices Rating Scale for Assessing Adherence to Evidence-Based Early Childhood Intervention Practices (Authors: Dathan Rush & M'Lisa Shelden)
2. Family-Centered Practices Checklist (Authors: Linda L. Wilson & Carl J. Dunst)
3. MRVI Intervention Implementation Fidelity Checklist for TSVI-EIs (Author: Catherine Smyth)
4. MRVI Implementation Fidelity Checklist (Author: Catherine Smyth)

This report section summarizes analysis of data generated from the administration of these assessments.

1

Study Three: Coaching Practices Rating Scale

The fourteen-item Coaching Practices Rating Scale for Assessing Adherence to Evidence-Based Early Childhood Intervention Practices (CPRS) was used to determine the extent to which practitioners used evidence-based coaching practices when supporting a learner in refining existing skills and developing new ones. CPRS item scores were assigned by observation of videos. For this analysis, responses were coded Yes = 1 or No = 0. The total possible score was 14.

There were 91 observations where CPRS scores were assigned; 44 were coaching groups and 47 were non-coaching group observations. Numbers of observations for the time period January through December 2017 were: January (11), February (9), March (8) April (10), May (8), June (7), July (7), August (8), September (7), October (5), November (6) and December (5). Numbers of observations within coaching and non-coaching groups by children's codes are displayed in Table 1.

Table 1: Numbers of Observations when CPRS Items were scored

	Coaching Group (N = 44)							Non-Coaching Group (N = 47)					
Child's ID Code:	1	1b	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	4	6	10	11	11	1	1	9	2	8	7	10	11

Frequency distributions of total scores for coaching and non-coaching groups for January – December 2017 are displayed as bar charts in Figure 1.

Figure 1: Bar Charts of CPRS Total Scores for Coaching and Non-Coaching Groups
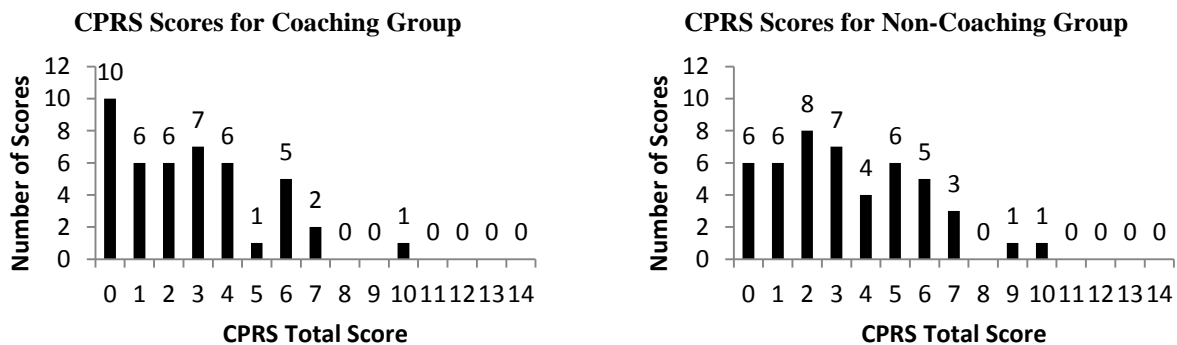
The two-sample t-test was used to test for differences in coaching group and non-coaching group CPRS total scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference $<>$ 0. Table 2 displays the number of CPRS scores (N), mean score ($\bar{x}$), standard deviation (SD), independent t-statistic (t), and p-value (p). Although the mean non-coaching score was greater than the coaching mean score, this difference was not statistically significant at the 0.05-level.

Table 2: Statistics for Coaching and Non-Coaching CPRS Total Scores

Coaching			Non-Coaching			t	p
N	$\bar{x}$	SD	N	$\bar{x}$	SD		
44	2.77	2.43	47	3.38	2.49	1.18	0.2402

2

Five of the fourteen CPRS items did not include reference to coaching or to targeted skills/practice so a **sub-score** consisting of the sum of scores for these five items was calculated. (The total possible sub-score was five since there were five items.) These were the five items:

Item #1: Acknowledged the learner's existing knowledge and abilities as the foundation for improving knowledge and skills.

Item #9: Used both planned and spontaneous opportunities to strengthen the learner's knowledge and skills.

Item #10: Asked probing questions to examine the learner's knowledge and abilities.

Item #12: Provided feedback about the learner's knowledge and skills following the learner's reflection on his/her performance.

Item #13: Provided and or promoting access to new information and resources after the learner reflects on his/her performance.

The two-sample t-test was used to test for differences in coaching group and non-coaching group **CPRS sub-scores** at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference < > 0. Table 3 displays the number of CPRS scores (N), mean score ($\bar{x}$), standard deviation (SD), independent t-statistic (t), and p-value (p). The non-coaching mean was greater than the coaching mean, but the difference in means was not statistically significant at the 0.05-level.

Table 3: Statistics for Coaching and Non-Coaching CPRS Sub-Scores

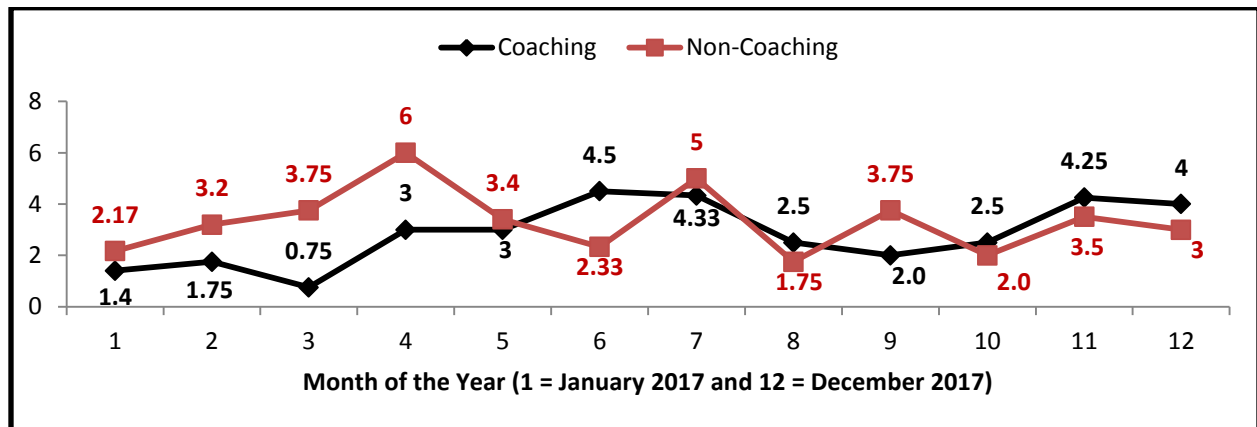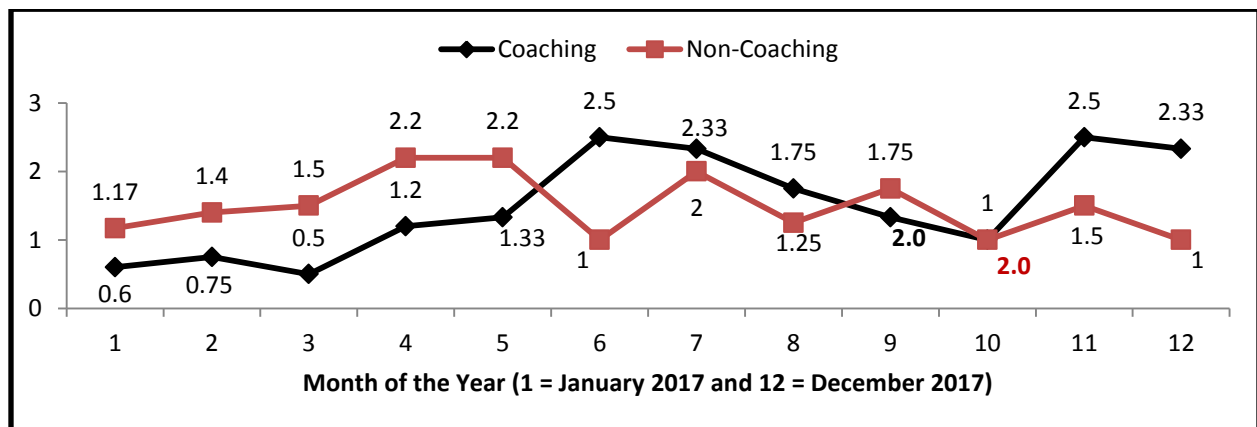| Coaching			Non-Coaching			t	p
N	$\bar{x}$	SD	N	$\bar{x}$	SD		
44	1.48	1.34	47	1.55	1.18	0.29	0.7741

Numbers of recorded scores each month are displayed in the Table 4 for the two groups over the twelve-month time period. This display is included for emphasis because mean sub-scores were prone to some fairly extreme fluctuations, at least in part, because of the small number of scores each month.

Table 4: Number of Recorded Scores Each Month in 2017 for Non/Coaching Groups

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Coaching	5	4	4	5	3	4	3	4	3	2	4	3
Non-Coaching	6	5	4	5	5	3	4	4	4	3	2	2

Figure 2A displays mean ratings of the CPRS (total) score for the coaching and non-coaching groups. The total possible CPRS score was 14.

Figure 2B displays mean ratings of the CPRS sub-score for the coaching and non-coaching groups. The total possible CPRS sub-score was 5.

3

Figure 2A: Monthly 2017 Mean Ratings of <u>CPRS Score</u> for Non/Coaching Groups

Figure 2B: Monthly 2017 Mean Ratings of CPRS Sub-Score for Non/Coaching Groups

> **For January - December 2017 CPRS mean total scores and mean sub-scores for the coaching and non-coaching groups were not significantly different.**

It was also of interest to determine if there was a significant difference between the scores in the beginning of the year (pretest) and the scores at the end of the year (posttest). The dependent t-test was used to test the differences between pre and posttest scores for the same families at the beginning of the year and the end of the year. There were only four pairs of pre/posttest scores that could be matched one-to-one.

Pre (January) and post (December) matched pair analysis of the difference between January 2017 scores (pretest) and December 2017 scores (posttest) for the CPRS total score and CPRS sub-score was explored even though there was little power to discern a difference. The same four study families were observed in January and in December; the codes were 3, 4, 11 and 12. Codes 3 and 4 were coaching and codes 11 and 12 were non- coaching.

The two-sample t-test was used to test for differences in coaching group and non-coaching group CPRS scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis:

4

difference $<>0$. Table 5 displays the number of scores (N), mean score ($\bar{x}$), standard deviation (SD), independent t-statistic (t), and p-value (p).

Table 5: Statistics for Pre/Post Matched Pair Coaching and Non-Coaching CPRS Scores

	Coaching			Non-Coaching			t	p
	N	$\bar{x}$	SD	N	$\bar{x}$	SD		
Total Score	2	4.00	4.24	2	1.50	6.36	0.46	0.6893
Total Sub-Score	2	2.50	2.12	2	2.00	0.50	0.94	0.4453

Frequency distributions of total scores for these two groups are displayed below. For the case in the non-coaching group that had a pretest score equal to "3", the posttest score was equal to "0".

Table 6: Total CPRS Score (Pre and Post) for Coaching and Non-Coaching Groups

Coaching Group									Non-Coaching Group								
Number of Recorded Scores									Number of Recorded Scores								
	0	1	2	3	4	5	6	7		0	1	2	3	4	5	6	7
Pre	1	1							Pre	1			1				
Post			1					1	Post	1						1	

Table 7: Total Sub-Score (Pre and Post) for Coaching and Non-Coaching Groups

Coaching Group						Non-Coaching Group				
Number of Recorded Scores						Number of Recorded Scores				
	0	1	2	3	4		0	1	2	3	4
Pre	2					Pre	1	1			
Post		1			1	Post	1		1		

Study Three: Family-Centered Practices Checklist

The seventeen-item Family-Centered Practices (FCPC) checklist is designed to determine the extent to which a practitioner uses family-centered helpgiving practices. These ratings were treated as categorical variables for this analysis.

There were 92 observations where scores were assigned; 44 were in the coaching group and 47 were in the non-coaching group. Numbers of observations for the time period January through December 2017 were: January (11), February (9), March (8), April (10), May (8), June (6), July (8), August (8), September (7), October (5), November (6) and December (5). Numbers of observations within coaching and non-coaching groups identified by children's codes are displayed in Table 8.

Table 8: Numbers of Observations when FCPC Items were scored

	Coaching Group (N = 44)							Non-Coaching Group (N = 47)					
Child's ID Code:	1	1b	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	4	6	10	11	11	1	1	9	2	8	7	10	11

Frequency distributions of item scores for coaching and non-coaching groups for the twelve months of 2017 (January- December) are displayed in Table 9.

5

For the first item (Communicate clear and complete information in a manner that matches the family's style and level of understanding) 55% of the 44 Coaching Group scores were "Yes, was used" and 60% of the 47 Non-Coaching Group scores were "Yes, was used."

Table 9: Frequency Distributions of Scores for each of 17 FCPC items for Non/Coaching Groups

| ITEM	Coaching Group (N = 44) Percent of Scores				Non-Coaching Group (N = 47) Percent of Scores			
	Yes, was used	Partially or sometimes	Not used	N/A	Yes, was used	Partially or sometimes	Not used	N/A
Communicate clear and complete information in a manner that matches the family's style and level of understanding	55	14	30	2	60	26	13	2
Interact with the family in a warm, caring and empathetic manner.	80	9	11		85	11	4	
Treat the family with dignity and respect and without judgment.	73	7	11	9	83	6	9	2
Communicate to and about the family in a positive way.	71	14	14	2	79	9	13	
Honor and respect the family's personal and cultural beliefs and values.	25	21	39	16	38	19	28	15
Focus on individual and family strengths and values.	39	14	39	9	36	28	30	6
Acknowledge the family's ability to achieve desired outcomes.	39	21	30	11	47	26	26	2
Work in partnership with parents/family members to identify and address family-identified desires.	30	16	41	14	43	23	21	13
Encourage and assist the family to make decisions about and evaluate the resources best suited for achieving desired outcomes	7	14	64	16	17	30	38	15
Seek and promote ongoing parent/family input and active participation regarding desired outcomes.	36	23	32	9	62	28	9	2
Encourage and assist the family to use existing strengths and assets as a way of achieving desired outcomes.	21	30	41	9	40	36	21	2
Provide family participatory opportunities to learn and develop new skills.	11	25	55	9	19	32	45	4
Assist the family to consider solutions for desired outcomes that include a broad range of family and community supports and recourses.	9	11	61	18	13	13	51	23
Support and respect family members' decisions.	25	18	48	9	45	13	36	6
Work with the family in a flexible and individualized manner.	55	9	34	2	64	23	13	
Offer help that is responsive to and matches the family's interests and priorities.	25	34	32	9	41	26	28	6
Assist the family to take a positive, planful approach to achieving desired outcomes.	21	23	48	9	30	19	43	9

6

The Chi-Square Test was used to test for distribution differences in the coaching group and non-coaching group FCPS item scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference < > 0. Bar charts and test statistics (df = 2) are presented for the seventeen items for the categorical ratings "1 = Yes, practice was used", "2 = Practice was partially, sometimes done", and "3 = Practice not used, opportunity missed". The distributions in Table 9 were recorded as percentages of the total number of scores whereas the numbers in the seventeen bar charts are numbers of recorded ratings. "4 = NA, no opportunity to observe the practice" is displayed in the bar charts but it was not used in the Chi-Square Test. In the following bar charts the black bars represent the Coaching Group and the red bars represent the Non-Coaching Group.

■ **Coaching** ■ **Non Coaching**

For the first item (Communicate clear and complete information in a manner that matches the family's style and level of understanding) the difference in the distributions of ratings was not significant at the 0.05-level ($X^2 = 4.79$, $p < 0.0911$).

Communicate clear and complete information in a manner that matches the family's style and level of understanding
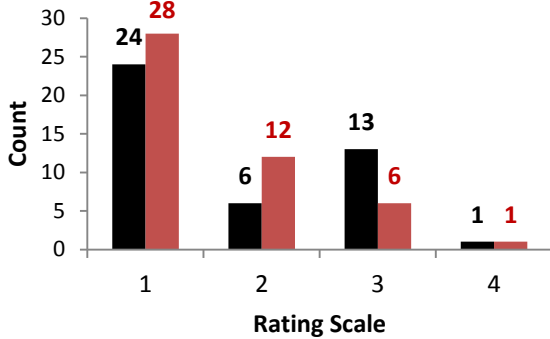
$X^2 = 4.79$ $p < 0.0911$

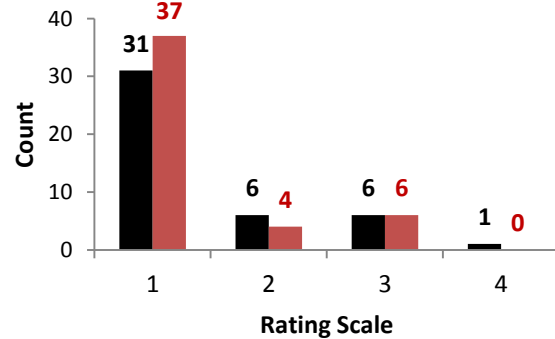**Interact with the family in a warm, caring and empathetic manner.**
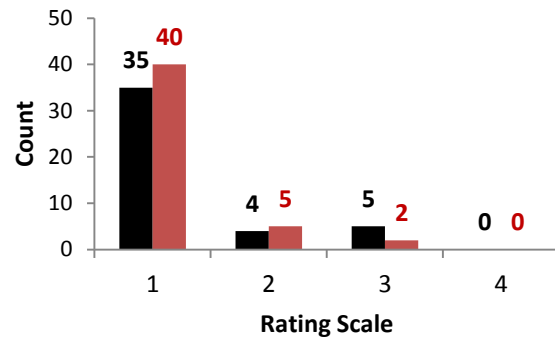
$X^2 = 1.63$ $p < 0.4420$

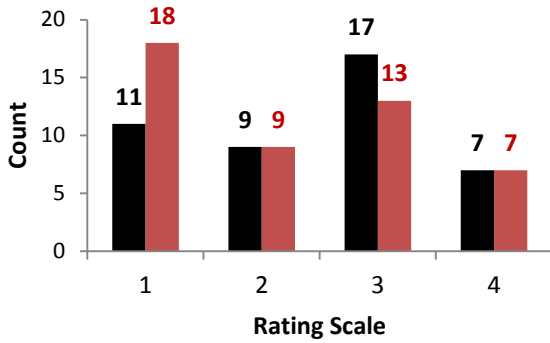**Treat the family with dignity and respect and without judgment.**
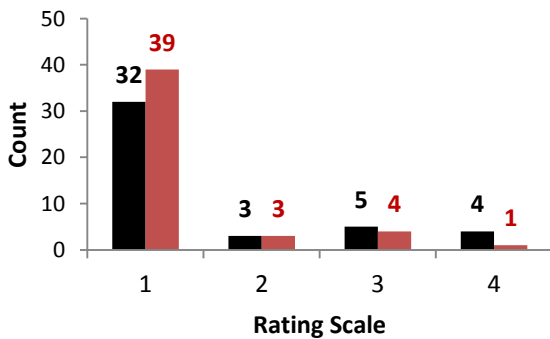
$X^2 = 0.07$ $p < 0.9648$
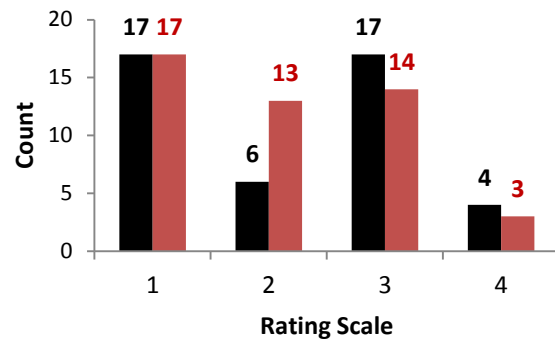

Communicate to and about the family in a positive way.

$X^2 = 0.75$ $p < 0.6862$

7

Honor and respect the family's personal and cultural beliefs and values.

$X^2 = 2.11$ $p < 0.3483$

Focus on individual and family strengths and values.
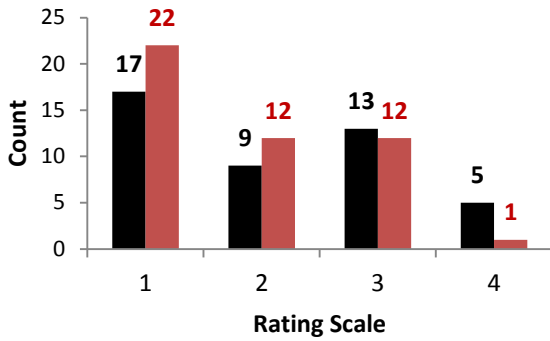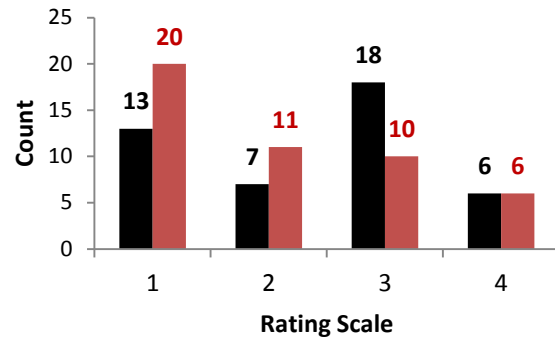

$X^2 = 2.68$ $p < 0.2612$

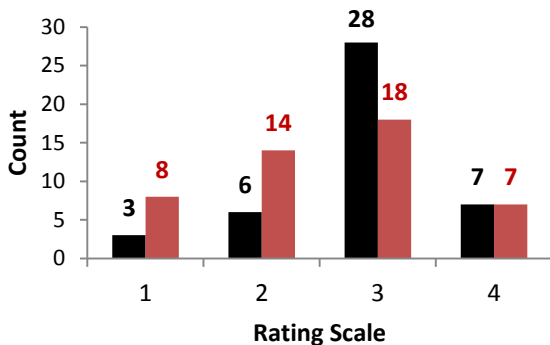**Acknowledge the family's ability to achieve desired outcomes.**

$X^2 = 0.54$ $p < 0.7646$

Work in partnership with parents/family members to identify and address family-identified desires.


$X^2 = 4.55$ $p < 0.1027$

Encourage and assist the family to make decisions about and evaluate the resources best suited for achieving desired outcomes

$X^2 = 7.54$ $p < 0.0230$

Remark: The non-coaching group used the practice more often and partially used the practice more often than the coaching group. The coaching group missed more opportunities than the non-coaching group did.

Seek and promote ongoing parent/family input and active participation regarding desired outcomes.
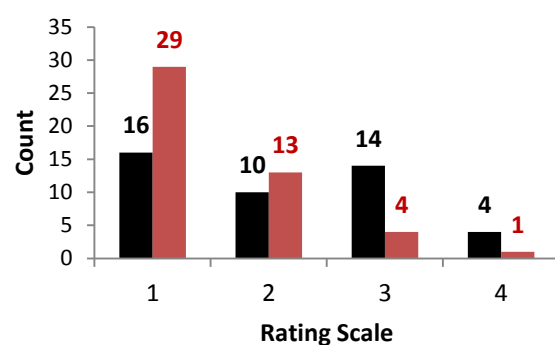
$X^2 = 9.33$ $p < 0.0094$

Remark: The non-coaching group used the practice more often and partially used the practice more often than the coaching group. The coaching group missed more opportunities than the non-coaching group did.
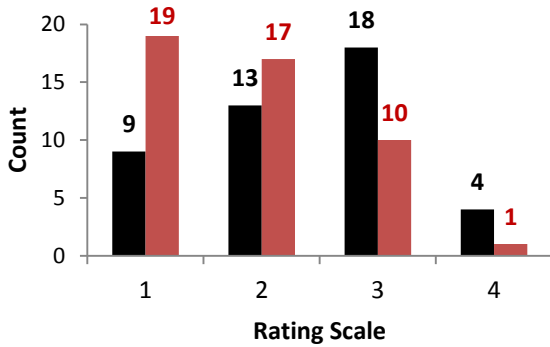
8

Encourage and assist the family to use existing strengths and assets as a way of achieving desired outcomes.

$X^2 = 6.00$ $p < 0.0498$

Remark: The non-coaching group used the practice more often and partially used the practice more often than the coaching group. The coaching group missed more opportunities than the non-coaching group did.
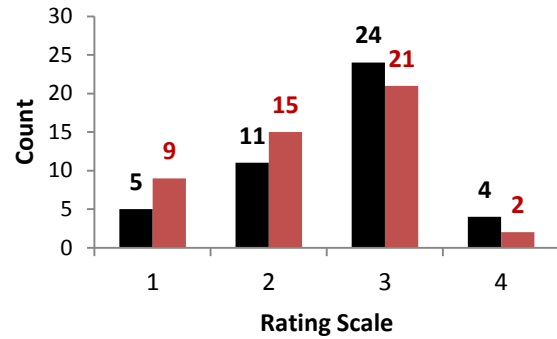
Provide family participatory opportunities to learn and develop new skills.

$X^2 = 1.67$ $p < 0.4339$

Assist the family to consider solutions for desired outcomes that include a broad range of family and community supports and recourses.

$X^2 = 0.67$ $p < 0.7163$

Support and respect family members' decisions.

$X^2 = 3.65$ $p < 0.1613$

9

Work with the family in a flexible and individualized manner
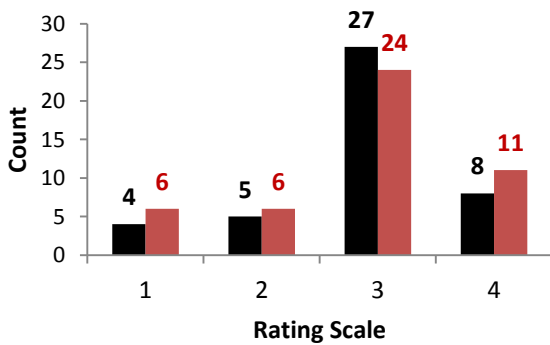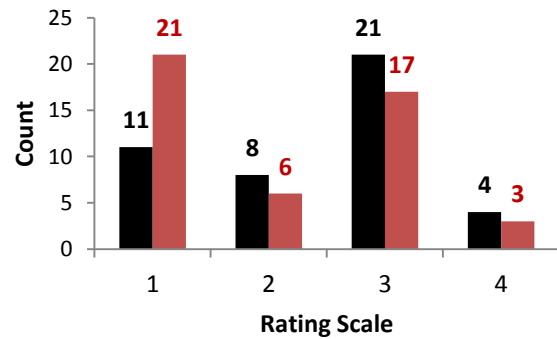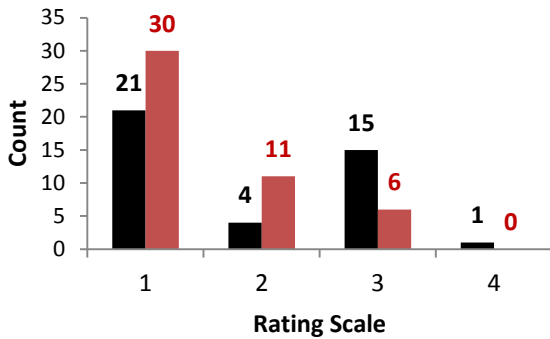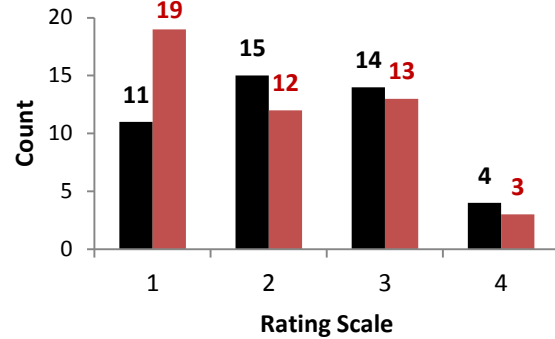

$X^2 = 7.63$ $p < 0.0221$

Remark: The non-coaching group used the practice more often and partially used the practice more often than the coaching group. The coaching group missed more opportunities than the non-coaching group did.

Offer help that is responsive to and matches the family's interests and priorities.

$X^2 = 2.31$ $p < 0.3137$

Assist the family to take a positive, planful approach to achieving desired outcomes.
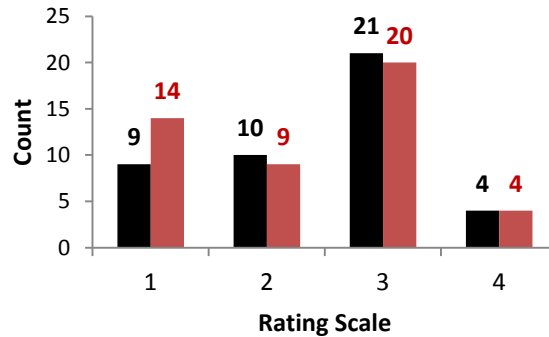
$X^2 = 1.06$ $p < 0.5895$

There were statistically significant differences in Coaching and Non-Coaching groups at the 0.05-level in the use of three Family Choice and Action Practices and one practitioner Responsiveness Practice with the non-Coaching Group using more of these practices (either fully or partially) than the Coaching Group.

Study Three: MRVI Intervention Implementation Fidelity Checklist (TSVI-EIs)

The five process indicators for this (TSVI-EIs) checklist are:
1. Number of Mealtime Routines Instructional practices coached
2. Number of times the MRVI tablet-based resources were shared
3. Number of TSVI-EI and caregiver discussions
4. Number of missed opportunities for MRVI intervention

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There were 51 observations (23 coaching and 28 non-coaching) where scores were assigned. Numbers of observations for the time period May through December 2017 were: May (5), June (5), July (9), August (7), September (8), October (5), November (8) and December (4). Numbers of observations within coaching and non-coaching groups identified by children's codes are displayed in Table 10.

Table 10: Numbers of Observations when the MRVI Fidelity Checklist (TSVI-EIs) was scored

Child's ID Code:	Coaching Group (N = 23)						Non-Coaching Group (N = 28)					
	1b	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	7	5	5	6	0	0	6	0	4	4	6	8

These data were tested for significant differences relevant to the process indicators for this checklist. Statistics are displayed in Table 11. The two-sample t-test was used to test for mean differences in coaching group and non-coaching group IRVI Intervention Implementation Fidelity Checklist (for TSVI-EIs) process indicator scores at the 0.05-level of significance: null hypothesis: difference $= 0$ and alternative hypothesis: difference $<> 0$.

Differences in mean scores were significantly different for the indicator "Number of missed opportunities for MRVI intervention" with the Non-Coaching Group mean rating greater than the Coaching Group mean rating; fewer missed opportunities for MRVI intervention were recorded for the Coaching Group than for the Non-Coaching Group.

Table 11: Statistics for Non/Coaching Indicators of Implementation Fidelity (TSVI-EIs)

Process Indicators	Coaching			Non-Coaching			t	p
	N	x̄	SD	N	x̄	SD		
Number of Mealtime Routines Instructional Practices coached.	23	7.17	4.74	28	8.36	5.14	0.85	0.4012
Number of times the MRVI tablet-based resources were shared.	23	1.26	1.32	28	0.86	1.86	0.87	0.3861
Number of TSVI-EI and caregiver discussions.	23	6.17	3.95	28	6.61	2.86	0.45	0.6520
Number of missed opportunities for MRVI intervention	23	0.48	0.79	28	1.21	1.50	2.25	0.0300

There were no statistically significant differences in the coaching and non-coaching groups in the number of mealtime routines instructional practices coached, number of times the MRVI tablet-based resources were shared, and the number of TSVI-EI and caregiver discussions.

There was a significant difference in the number of missed opportunities for MRVI intervention with the Non-Coaching Group missing more opportunities for intervention than the Coaching Group.

Figures 3A, 3B, 3C and 3D display the mean ratings for the months May, June, July, August, September, October, November and December 2017 for the coaching and non-coaching groups. The assessment was not used prior to May 2017.

There was no discernable trend from May to December. Once again, there were very few ratings used to determine these means so one score could have high influence on the mean for a particular month.

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Figure 3A: "Number of Mealtime Routines Instructional Practices Coached" Mean Ratings
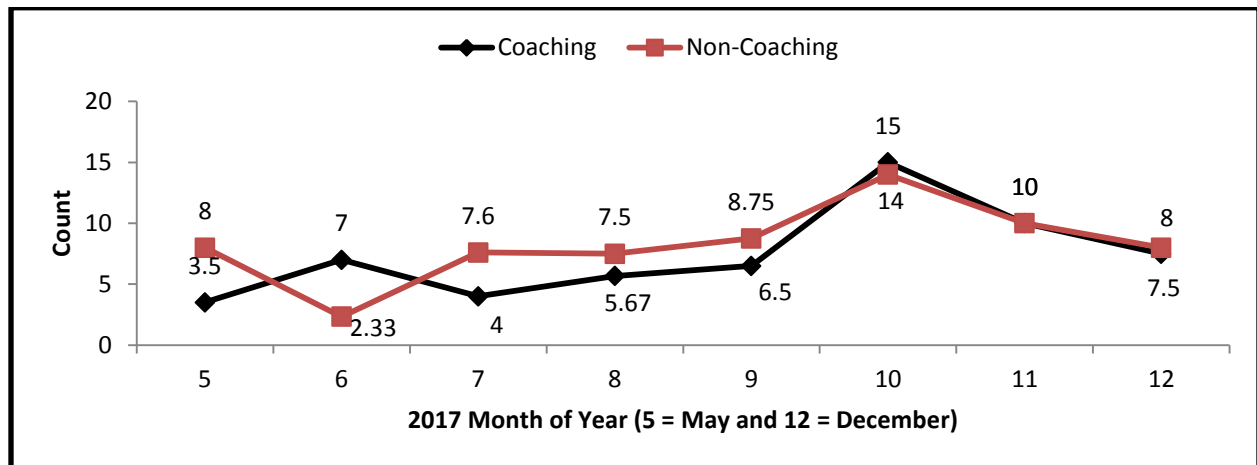

Figure 3B: "Number of times the MRVI tablet-based resources were shared" Mean Ratings
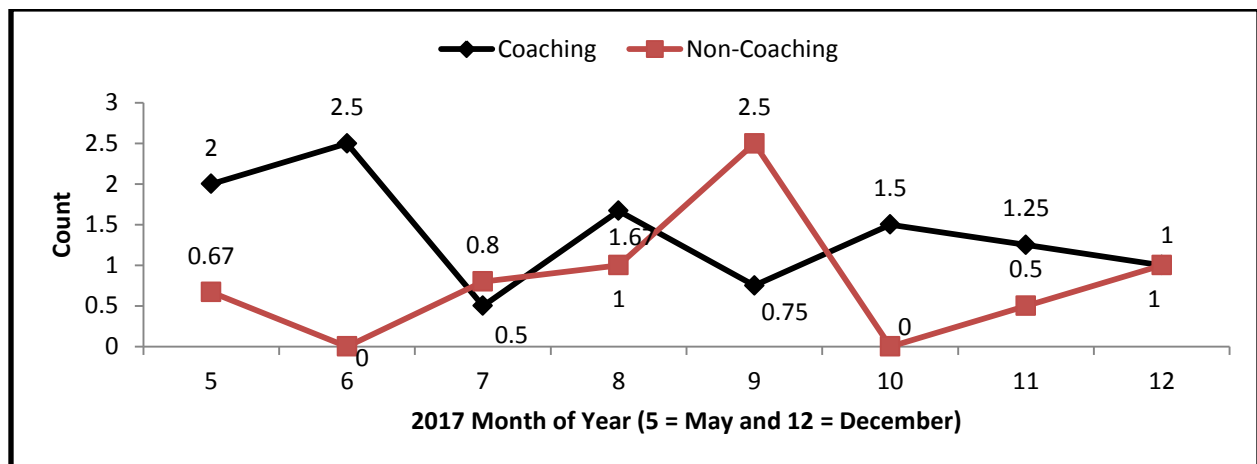

Figure 3C: "Number of TSVI-EI and caregiver discussions" Mean Ratings
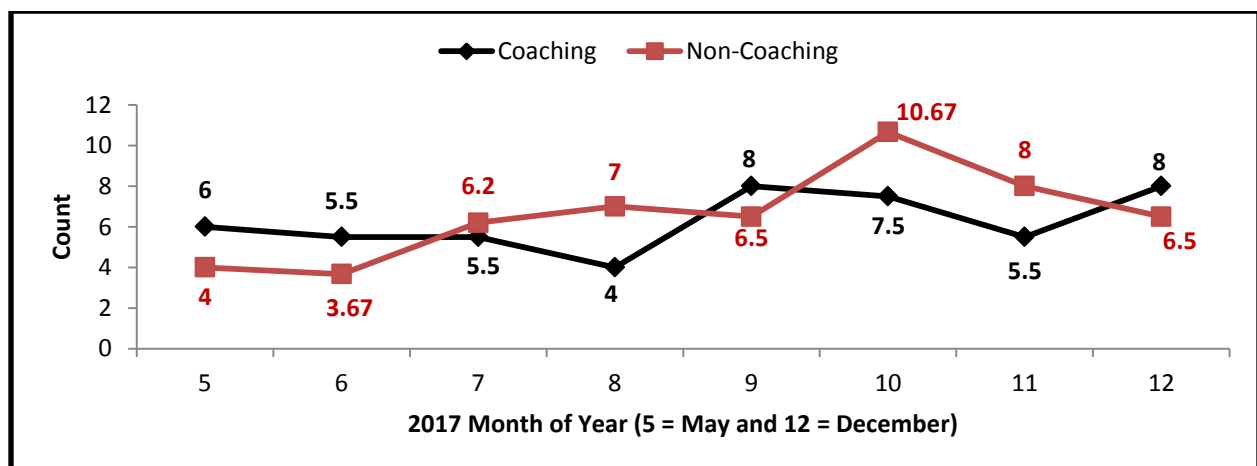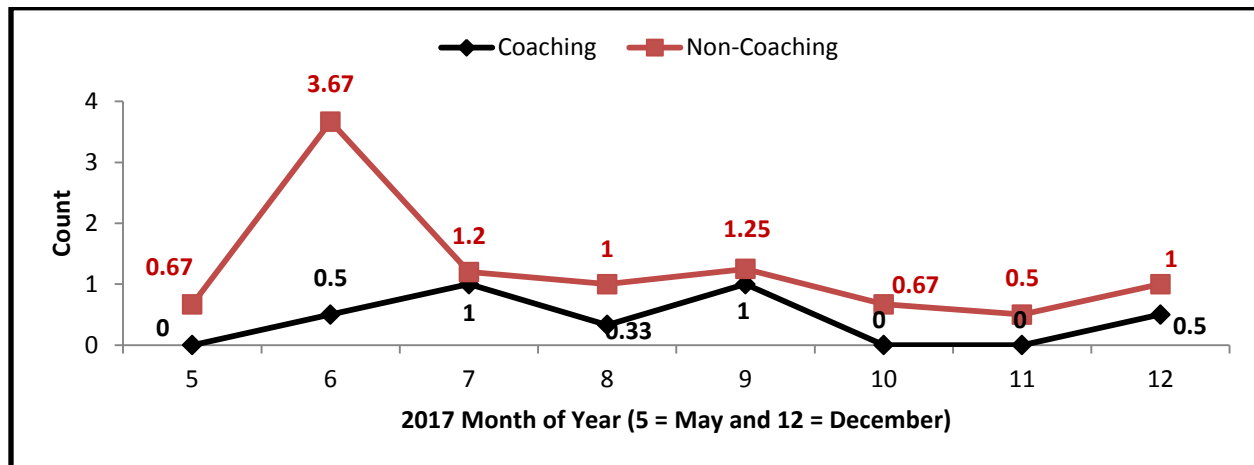

12

Figure 3D: "Number of missed opportunities for MRVI intervention" Mean Ratings

Study 3: The MRVI Implementation Fidelity Checklist

The MRVI TSVI Implementation Fidelity Checklist was implemented in February, March, April and May2017. This checklist includes four process indicators:

1. Number of mealtime routines instructional practices observed
2. Number of times the MRVI tablet based resources were used
3. Number of positive mealtime routine caregiver/child interactions
4. Number of negative mealtime routine experiences

There were 29 observations (13 coached and 16 non-coached) where scores were assigned. Numbers of observations for the time period February to May 2017 were: February (9), March (7), April (10) and May (3) . Numbers of observations within coached and non-coached groups identified by child/family codes are displayed in Table 12. None of the mean differences were significant at the 0.05-level.

Table 12: Numbers of Observations when the MRVI Fidelity Checklist (Caregiver) was scored

	Coached Group (N = 13)						Non-Coached Group (N = 16)					
Child's ID Code:	1	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	3	3	2	4	0	1	3	1	4	2	3	3

These data were tested for significant differences in means relevant to the process indicators for this checklist. Statistics are displayed in Table 13.

Table 13: Statistics for Coached and Non-Coached Implementation Fidelity Indicators

Process Indicators	Coached Group			Non-Coached Group			t	p
	N	$\bar{x}$	SD	N	$\bar{x}$	SD		
Number of mealtime routines instructional practices observed	13	4.62	4.48	16	5.44	2.99	0.59	0.5596
Number of times the MRVI tablet based resources were used	13	0.23	0.60	16	0.13	0.34	0.60	0.5548
Number of positive mealtime routine caregiver/child interactions	13	5.62	4.03	16	7.75	8.92	0.80	0.4322
Number of negative mealtime routine experiences	13	2.31	3.97	16	4.06	4.42	1.11	0.2757

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> **None of the Coached and Non-Coached Group means for the four process indicators of the MRVI Implementation Fidelity Checklist implemented in February, March, April and May 2017 were significantly different.**

STUDY FOUR

Results of data analyses are reported in this report section for the Study Four research question: Do parents/caregivers demonstrate a change in their level of confidence at mealtimes with their infants/toddlers after participating in the coached and non-coached MRVI intervention?

Two rating scales, a checklist and an inventory were used to assess differences between coached and non-coached groups as delineated in the Study Four research question. These assessments were the:
1. The MRVI Intervention Implementation Fidelity Checklist for Caregivers (MRVI Intervention Project)
2. Parenting Confidence and Efficacy Scale (Winterberry Press)
3. MRVI Mealtime Communication Inventory (MRVI Intervention Project)
4. NCAST Feeding Scale (NCAST Programs)

This report section summarizes analysis of data generated from the administration of these assessments.

Study 4: MRVI Intervention Implementation Fidelity Checklist (Caregivers)

The three process indicators for this checklist for caregivers were:
1. Number of Mealtime Routines Instructional practices observed
2. Number of positive mealtime routine caregiver/child interactions
3. Number of negative mealtime routine experiences

There were 59 observations (27 coached and 32 non-coached) where scores were assigned. Numbers of observations for the time period May to December 2017 were: May (5), June (7), July (9), August (8), September (9), October (7), November (8) and December (6). Numbers of observations within coached and non-coached groups identified by child/family codes are displayed in Table 14.

Table 14: Numbers of Observations when the MRVI Fidelity Checklist (Caregiver) was scored

	Coached Group (N = 27)						Non-Coached Group (N = 32)					
Child's ID Code:	1b	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	7	6	8	6	0	0	8	0	6	4	6	8

These data were tested for significant differences in means relevant to the process indicators for this checklist. Statistics are displayed in Table 15. The two-sample t-test was used to test for differences in coached group and non-coached group scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference < > 0. Table 15 displays the number of CPRS scores (N), mean score ($\bar{x}$), standard deviation (SD), independent t-statistic (t), and p-value (p).

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Table 15: Statistics for Coached and Non-Coached Implementation Fidelity Indicators (Caregiver)

Process Indicators	Coached Group			Non-Coached Group			t	p
	N	x̄	SD	N	x̄	SD		
Number of mealtime routines instructional practices observed	27	13.37	9.64	32	14.81	9.29	0.58	0.5616
Number of positive mealtime caregiver/child interactions	27	8.93	5.76	32	10.28	6.83	0.82	0.4183
Number of negative mealtime routine experiences	27	4.37	3.26	32	3.84	4.85	0.48	0.6334

For the MRVI Fidelity Checklist (Caregiver) means of mealtime routines instructional practices observed, positive caregiver/child interactions and negative mealtime routine experiences were not significantly different.

The following three figures (4A, 4B and 4C) display the Coaching Group and Non-Coaching Group mean ratings for the MRVI Fidelity Checklist (Caregiver) for the months May 2017 through December 2017.

Numbers of observations rated for each of the months for the Coaching and Non-Coaching Groups (displayed as Coaching/Non-Coaching) were: May (2/3), June (3/4), July (4/5), August (4/4), September (4/5), October (3/4), November (4/4) and December (3/3).

In May two observations contributed to the mean for the Coaching Group and three observations contributed to the mean for the Non-Coaching Group.

Figure 4A: "Number of mealtime routines instructional practices observed" Mean Ratings

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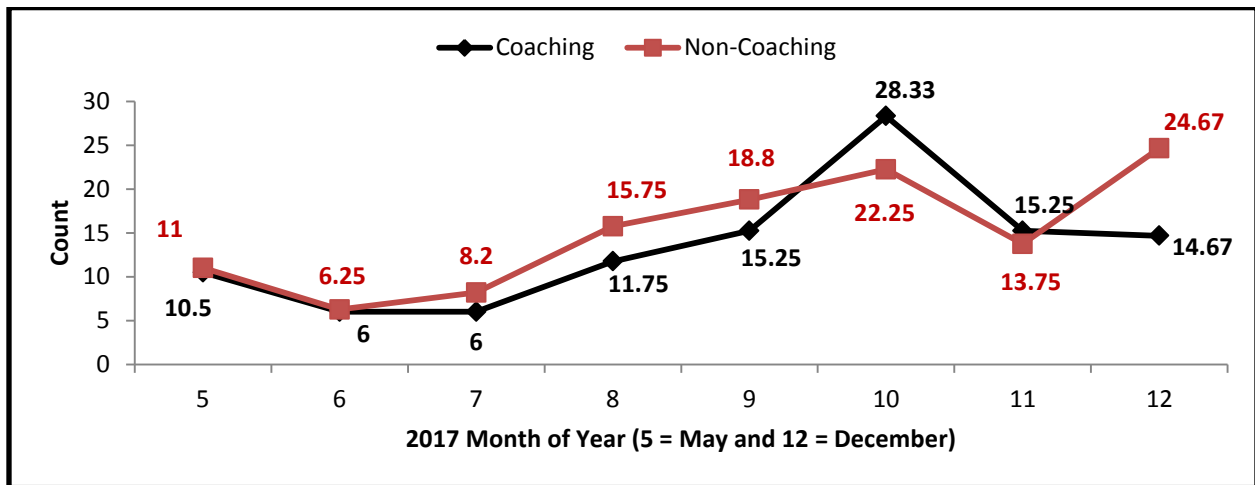
Figure 4B: "Number of positive mealtime caregiver/child interactions" Mean Ratings
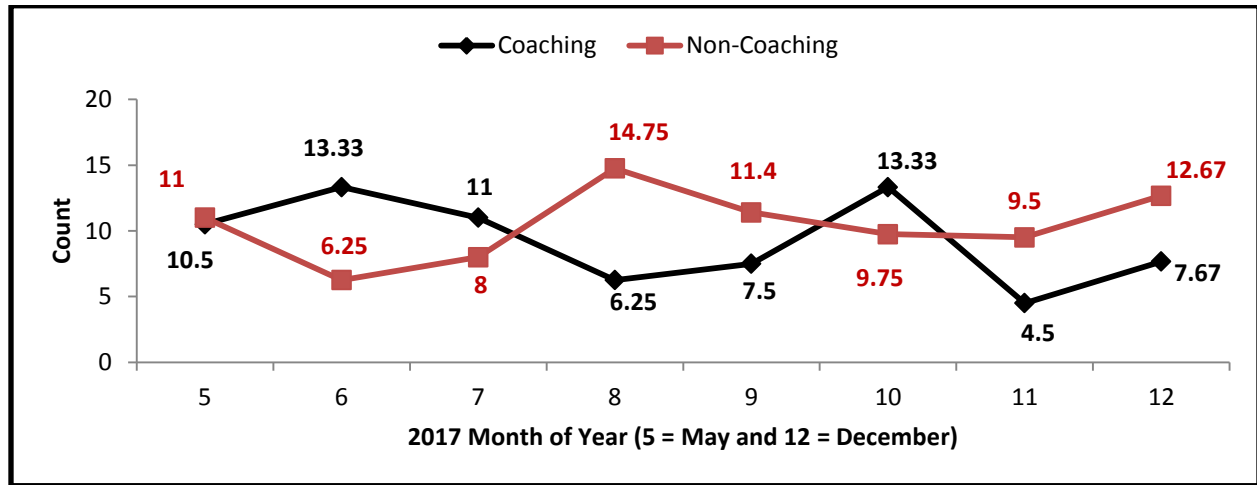
Although there appears to be somewhat of an indication that the number of negative mealtime routine experiences decreased from May to December for the Coaching group. The number of observations for each month for the Coaching Group: May (2 observations), June (3 observations), July (4 observations), August (4 observations), September (4 observations), October (3 observations), November (4 observations) and December (3 observations).

Figure 4C: "Number of negative mealtime routine experiences" Mean Ratings
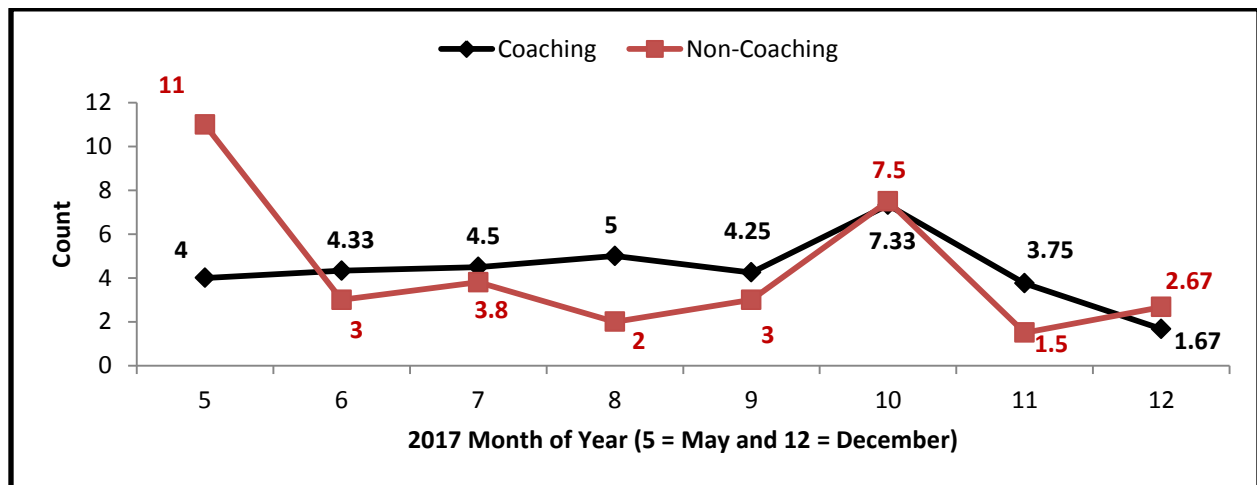
Study Four: Parenting Confidence and Efficacy Scale

The Parenting Confidence and Efficacy Scale (PCES) includes four items which were rated from 1 to 5 (1 low and 5 high) during the observations. The scale items based on observations of the entire family visit are: Caregiver Effort, Caregiver Strategizing, Caregiver Emotional Regulations and Caregiver Pride/Gratification.

For January 2017 through December 2017 there were 100 scored observations; 46 were observations of the coached group and 54 were observations of the non-coached group. Numbers of observations for the time period were: January (11), February (9), March (8), April (10), May (8), June (7), July (9), August

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(8), September (9), October (7), November (8) and December (6). Numbers of observations within coached and non-coached groups identified by children's codes are displayed in Table 16.

Table 16: Numbers of Observations when PCES Items were rated

	Coached Group (N = 46)							Non-Coached Group (N = 54)					
Child's ID Code:	1	1b	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	4	7	10	12	11	1	1	12	2	11	7	10	12

Frequency distributions of PCES item total scores for coached and non-coached groups for January 2017 through December 2017 are displayed in Table 17. The rating "5" was never assigned.

Table 17: Distributions of PCES Scale Items Ratings for Coached and Non-Coached Groups

PCES Items	Percent of Recorded Ratings									
	Coached Group (N = 46)					Non-Coached Group (N = 54)				
	1 = low	2	3	4	5 = high	1 = low	2	3	4	5 = high
Caregiver Effort	7	9	35	50	0	4	24	30	43	0
Caregiver Strategizing	9	33	28	30	0	7	39	30	24	0
Caregiver Emotional Regulation	2	4	37	57	0	2	13	35	50	0
Caregiver Pride/Gratification	2	26	48	24	0	4	17	54	26	0

The two-sample t-test was used to test for mean differences in coached group and non-coached group scale item ratings at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference $<>$ 0. Table 18 displays number of PCES scores (N), mean score ($\bar{x}$), standard deviation (SD), t-statistic (t) and p-value (p). The Coached Group mean scores were greater than the Non-Coached Group mean scores but these differences were not statistically significant at the 0.05-level.

Table 18: Statistics for Coached and Non-Coached Groups PCES Item Scores

PCES Items	Coached Group			Non-Coached Group			t	p
	N	$\bar{x}$	SD	N	$\bar{x}$	SD		
Caregiver Effort	46	3.28	0.89	54	3.11	0.90	0.95	0.3424
Caregiver Strategizing	46	2.80	0.98	54	2.70	0.92	0.53	0.5988
Caregiver Emotional Regulation	46	3.48	0.69	54	3.33	0.78	0.98	0.3306
Caregiver Pride/Gratification	46	2.93	0.77	54	3.02	0.76	0.54	0.5880

> **Mean scores for caregiver effort, strategizing and emotional regulation did not differ significantly for the Coached and Non-Coached Groups for January through December 2017.**

The following four figures (5A, 5B, 45C and 5D) display the Coached Group and Non-Coached Group mean ratings for the PCES for twelve months: January 2017 through December 2017. Numbers of observations rated for each of the months for the Coached and Non-Coached Groups (displayed as

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Coached/Non-Coached) were: January (5/6), February (4/5), March (4/4), April (5/5), May (3/5), June (3/4), July (4/5), August (4/4), September (4/5), October (3/4), November (4/4) and December (3/3).

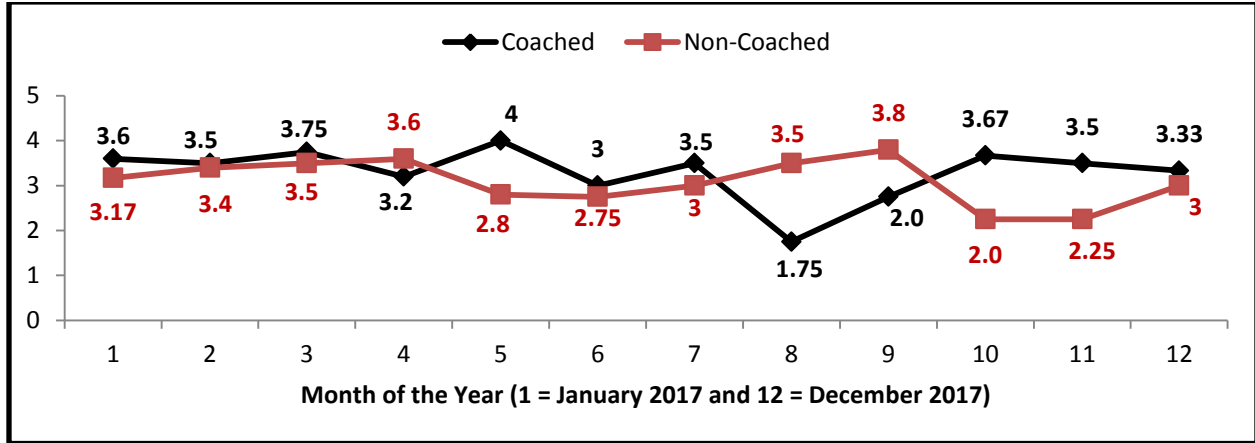**Figure 5A: PCES Caregiver Effort Mean Ratings for Coached and Non-Coached Groups**

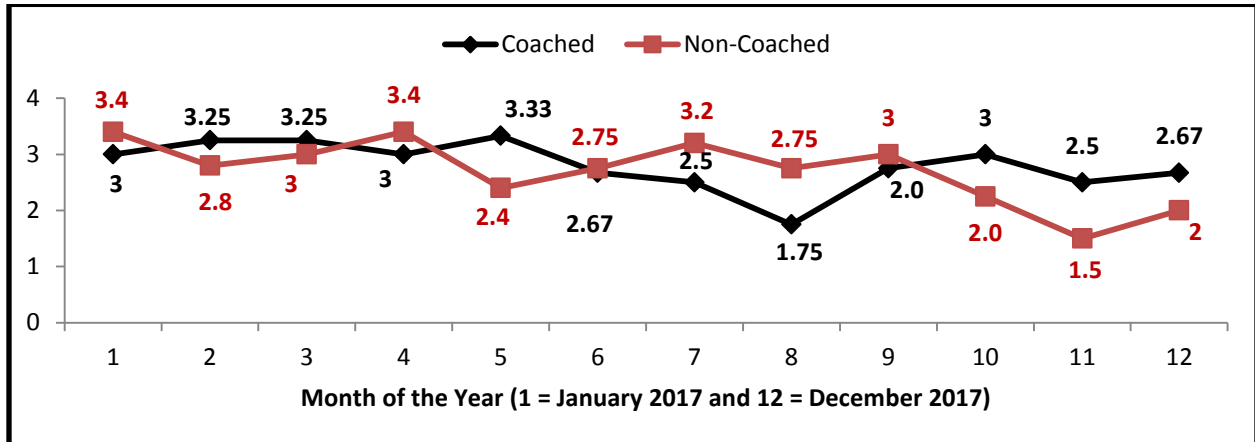**Figure 5B: PCES Caregiver Strategizing Mean Ratings for Coached and Non-Coached Groups**

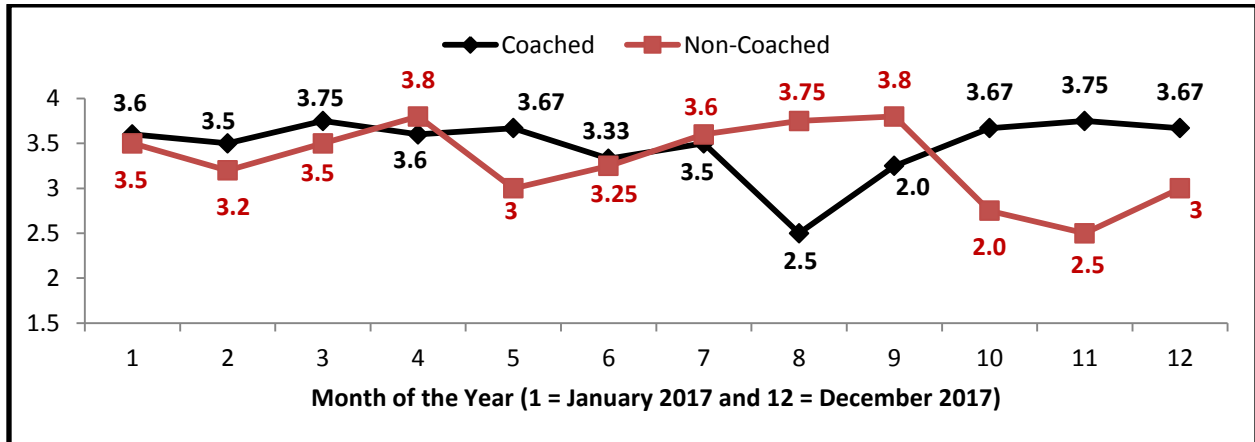**Figure 5C: PCES Caregiver Emotional Regulation Mean Ratings for Non/Coached Groups**

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Figure 5D: PCES Caregiver Pride/Gratification Mean Ratings for Non/Coached Groups
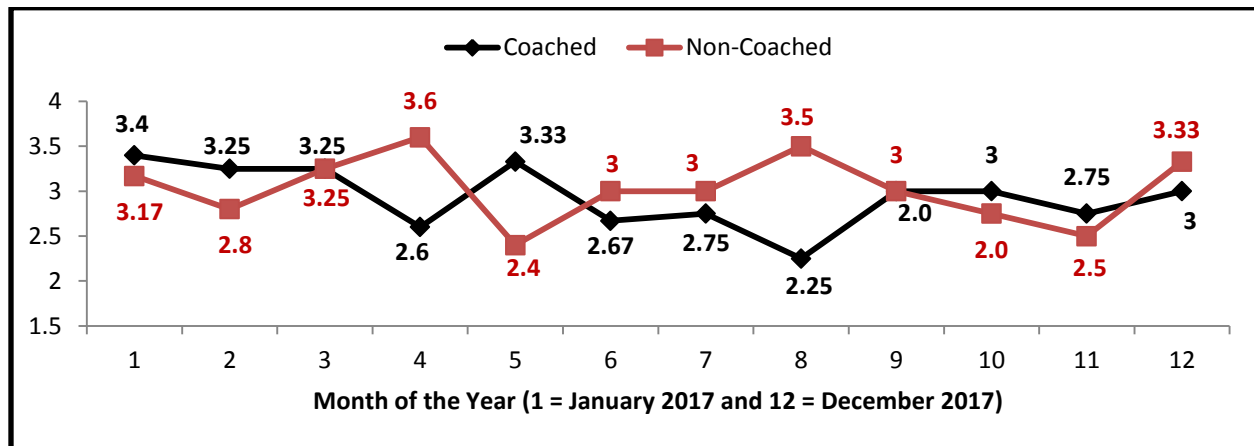
Study Four: MRVI Mealtime Communication Inventory

The MRVI Mealtime Communication Measure (MCM) is an observation checklist of three measures: (1) Preparing for the Mealtime, (2) Mealtime and (3) Ending the Mealtime. The highest possible total scores for each of these are: Preparing for the Mealtime (7), Mealtime (7) and Ending the Mealtime (6).

For January 2017 through December 2017 there were 100 scored observations; 47 were coached group observations and 53 were non-coached group observations. Numbers of observations for the time period January 2017 through December 2017 were: January (11), February (9), March (8), April (10), May (8), June (7), July (9), August (8), September (9), October (7), November (8) and December (6). Numbers of observations within coached and non-coached groups identified by children's codes are displayed in Table 19.

Table 19: Numbers of Observations when MCM Items were rated

	Coaching Group (N = 47)							Non-Coaching Group (N = 53)					
Child's ID Code:	1	1b	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	5	7	10	12	11	1	1	12	2	10	7	10	12

The two-sample t-test was used to test for mean differences in coached group and non-coached group scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference < > 0. Table 20 displays the number of scores (N), mean score ($\bar{x}$), standard deviation (SD),independent t-statistic (t) and p-value (p).

The Non-Coached Mean Score was greater than the Coached Mean Score for "Preparing for the Mealtime". There were no significant differences in the means for the other three measures: During the Meal, After the Meal and Total MRVI Score.

Table 20: Statistics for Coached and Non-Coached Groups MCM Scores

Mealtime Measures	Coached Group			Non-Coached Group			t	p
	N	$\bar{x}$	SD	N	$\bar{x}$	SD		
Preparing	47	1.13	1.15	53	1.89	1.45	2.87	0.0050

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Mealtime Measures	Coached Group			Non-Coached Group			t	p
	N	x̄	SD	N	x̄	SD		
During	47	3.57	1.46	53	3.66	1.54	0.29	0.7760
Ending	47	1.94	1.63	53	2.09	1.47	0.51	0.6116
Total Score	47	6.67	3.30	53	7.64	3.19	1.54	0.1259

There was no statistically significant difference in MCM measures for coached and non-coached groups for "During the Meal", "Ending the Meal" or the total MCM score.

The mean rating for "Preparing for the Meal" was significantly greater for the Non-Coached Group.

The following four figures (6A, 6B, 6C and 6D) display the Coached Group and Non-Coached Group mean ratings for the MCM for twelve months: January 2017 through December 2017. The number of scores each month for the Coached/Non-Coached Groups reported each month were : January (5/6), February (4/5), March (5/3), April (5/5), May (3/5), June (3/4), July (4/5), August (4/4), September (4/5), October (3/4), November (4/4) and December (3/3).

From March through December 2017 the Non-Coached Group's mean scores were consistently greater than the Coached Group scores for "Before the Meal".

Figure 6A: MCM "Before the Meal" Mean Ratings for Non/Coached Groups
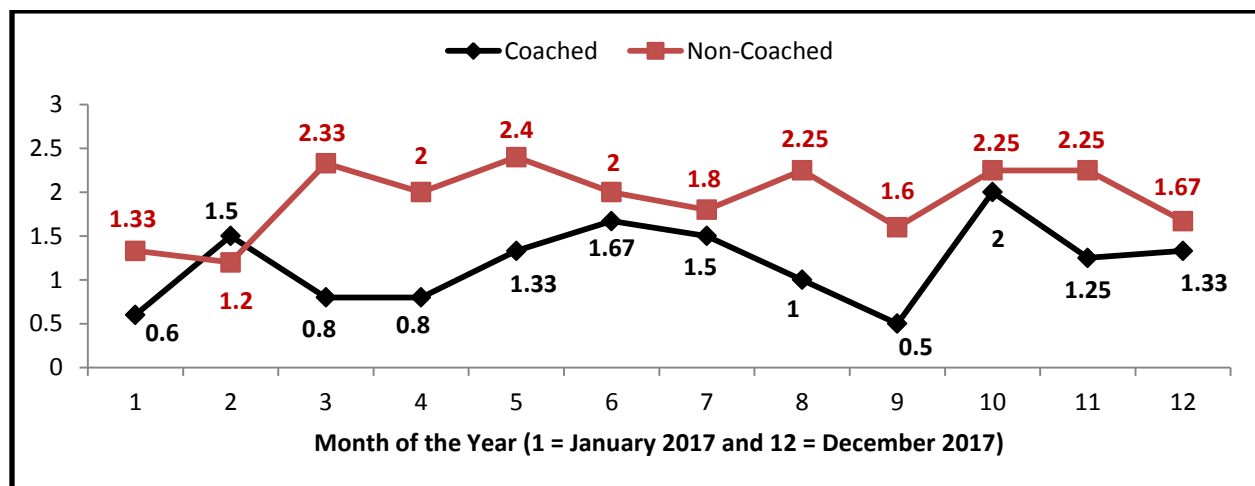
Except for a slight dip in February the monthly "During the Meal" mean ratings for the Non-Coached Group did not decrease from April through December 2017.

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Figure 6B: MCM "During the Meal" Mean Ratings for Non/Coached Groups
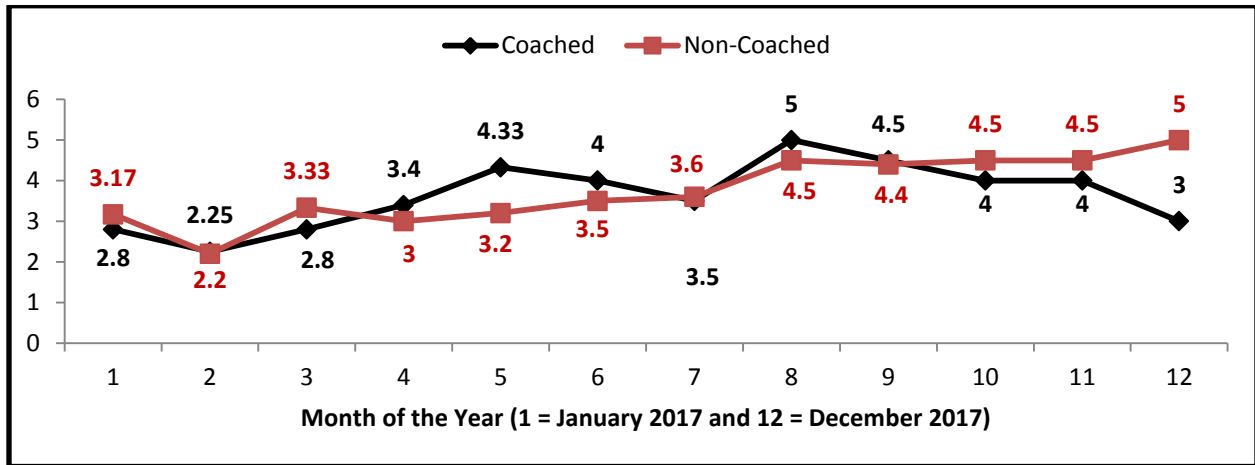
Figure 6C: MCM "After the Meal" Mean Ratings for Non/Coached Groups
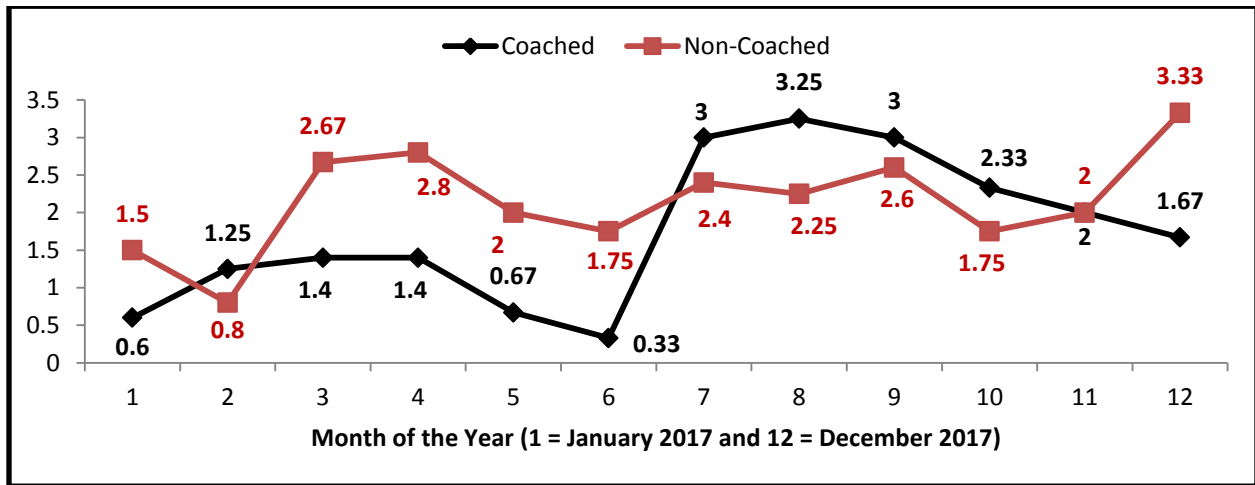
Figure 6D: MCM Total Score Mean Ratings for Non/Coached Groups

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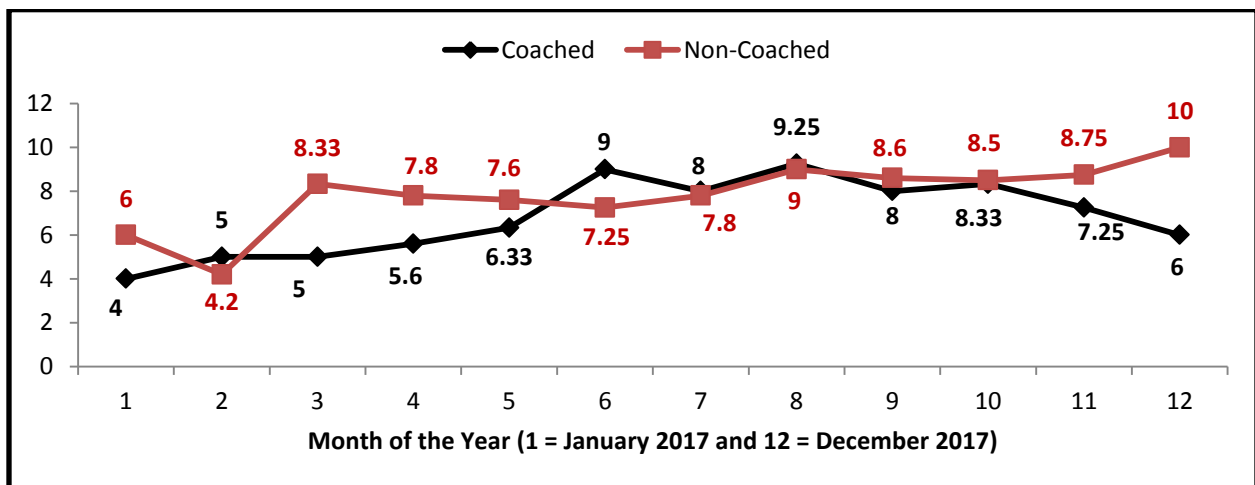
Study Four: NCAST Feeding Scale

The Nursing Child Assessment Satellite Training (NCAST) Feeding Scale assesses caregiver/child interaction with Yes/No responses to 76 items. The score was the total number of yes answers. Total possible scores for each of the subscales were Sensitivity to Cues (16), Response to Child's Distress (11), Social-Emotional Growth Fostering (14), Cognitive Growth Fostering (9), Clarity of Cues (15), and Responsiveness to Caregiver (11).

For January 2017 through December 2017 there were 100 scored observations; 47 were coached group observations and 53 were non-coached group observations. Numbers of observations for the time period January through December 2017 were: January (11), February (9), March (8), April (10), May (8), June (7), July (9), August (8), September (9), October (7), November (8) and December (6). Numbers of observations within coached and non-coached groups identified by children's codes are displayed in Table 21.

Table 21: Numbers of Observations when NCAST was completed

	Coaching Group (N = 47)							Non-Coaching Group (N = 53)					
Child's ID Code:	1	1b	3	4	5	6	7	2	8	9	10	11	12
Number of Observations:	6	6	10	12	11	1	1	12	2	11	7	10	11

The two-sample t-test was used to test for mean differences in coached group and non-coached group total subscale scores at the 0.05-level of significance: null hypothesis: difference = 0 and alternative hypothesis: difference $<>0$. Table 22 displays number of scores (N), mean score ($\bar{x}$), standard deviation (SD), independent t-statistic (t) and p-value (p). None of the seven mean scores for the coached and non-coached groups were significantly different.

Table 22: Statistics for NCAST Sub-Scale Scores for Coached and Non-Coached Groups

Description	Coached Group			Non-Coached Group			t	p
	N	$\bar{x}$	SD	N	$\bar{x}$	SD		
Sensitivity to Cues	47	12.62	1.65	53	12.62	1.83	0.02	0.9872
Response to Child's Distress	47	9.11	1.89	53	9.21	1.77	0.28	0.7829
Social-Emotional Growth Fostering	47	11.64	2.41	53	11.28	2.59	0.71	0.4809
Cognitive Growth Fostering	47	7.28	1.96	53	7.64	1.43	1.07	0.2870
Clarity of Cues	47	12.00	1.84	53	12.55	1.90	1.46	0.1476
Responsiveness to Caregiver	47	6.85	1.91	53	7.19	1.83	0.90	0.3693
TOTAL NCAST SCORE	47	59.49	8.07	53	60.49	8.70	0.59	0.5539

> **There were no significant differences in mean scores for sensitivity to cues, response to child's distress, social-emotional growth fostering, cognitive growth fostering, clarity of cutes or responsiveness to caregiver between coached and non-coached groups.**

Monthly mean scores for the Coached and Non-Coached groups are displayed in the following Figures (7A, 7B, 7C, 7D, 7E, 7F and 7G) for the six NCAST subscales.

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Figure 7A: Monthly "Sensitivity to Cues" Mean Ratings for Coached and Non-Coached Groups

Coached — Non-Coached

Coached: 13.2, 13, 12.25, 11.4, 13, 13.33, 13.75, 13.2, 11.25, 13, 12.5, 11.67
Non-Coached: 14.33, 11, 13, 12.8, 13, 12.75, 12.6, 11.67, 12.8, 12.5, 11.75, 12.33

Month of the Year (1 = January 2017 and 12 = December 2017)
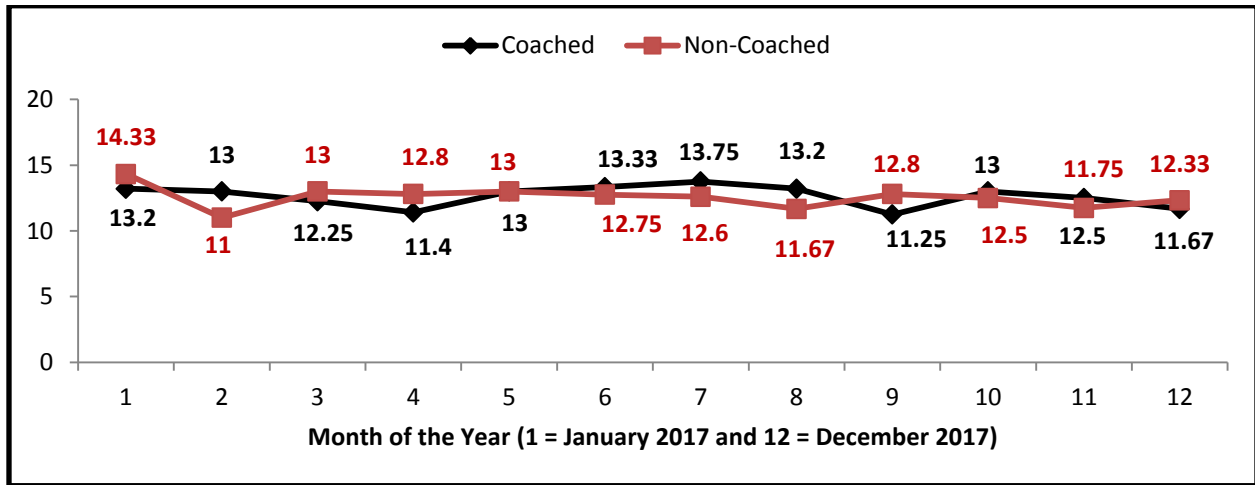
Figure 7B: Monthly "Response to Child's Distress" Mean Ratings for Non/Coached Groups

Coached — Non-Coached

Coached: 8.8, 9, 7.25, 9.2, 9, 10, 10, 9.6, 9, 9.33, 8.75, 9.67
Non-Coached: 9.83, 7, 7.5, 9, 8.8, 9.5, 10.2, 11, 9.8, 8.5, 10.25, 9.67

Month of the Year (1 = January 2017 and 12 = December 2017)
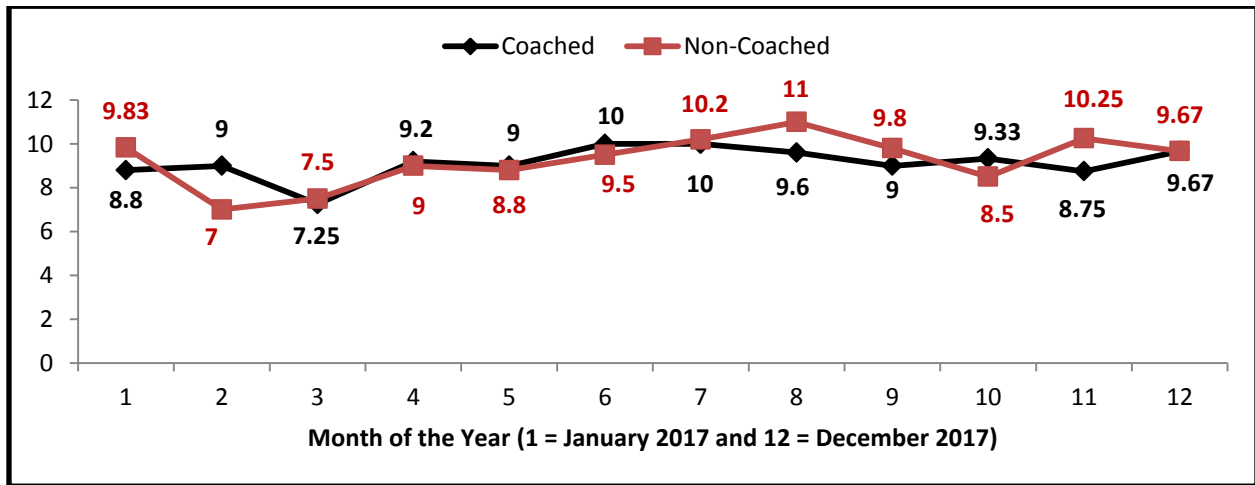
Figure 7C: Monthly "Social-Emotional Growth Fostering" Mean Ratings for Non/Coached Groups

Coached — Non-Coached

Coached: 10.8, 12, 11.5, 11.8, 12, 13, 12.5, 12.4, 10, 13.33, 10.5, 10.33
Non-Coached: 12.33, 10.2, 12, 11, 11.2, 11.25, 11.6, 12.67, 12, 9.5, 9.75, 12

Month of the Year (1 = January 2017 and 12 = December 2017)

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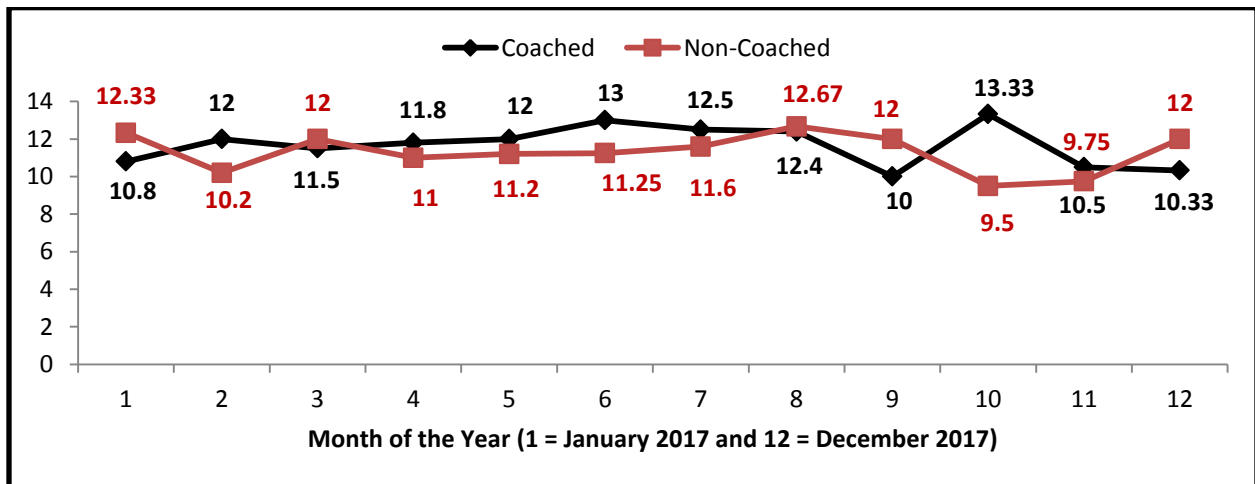
There was a slight upward trend in mean scores for both the Coached and Non-Coached group in "Cognitive Growth Fostering." Since there was a fairly consistent upward trend in scores from January to December, ANOVA was used to test the coached and non-coached monthly mean scores for differences.

There was no significant difference for the Coached mean scores ($F = 0.83$, $p < 0.6081$), but there was a significant difference in monthly scores for the Non-Coached Group in Cognitive Growth Fostering ($F = 2.05$, $p < 0.0479$). The Tukey Comparison Method finding at the 0.05 alpha level was that the February mean score (5.60) was significantly less than the July mean score (9.00) for the non-Coached group.

The codes that contributed to the February and July means are included in Chart 7D.

Figure 7D: Monthly "Cognitive Growth Fostering" Mean Ratings for Non/Coached Groups
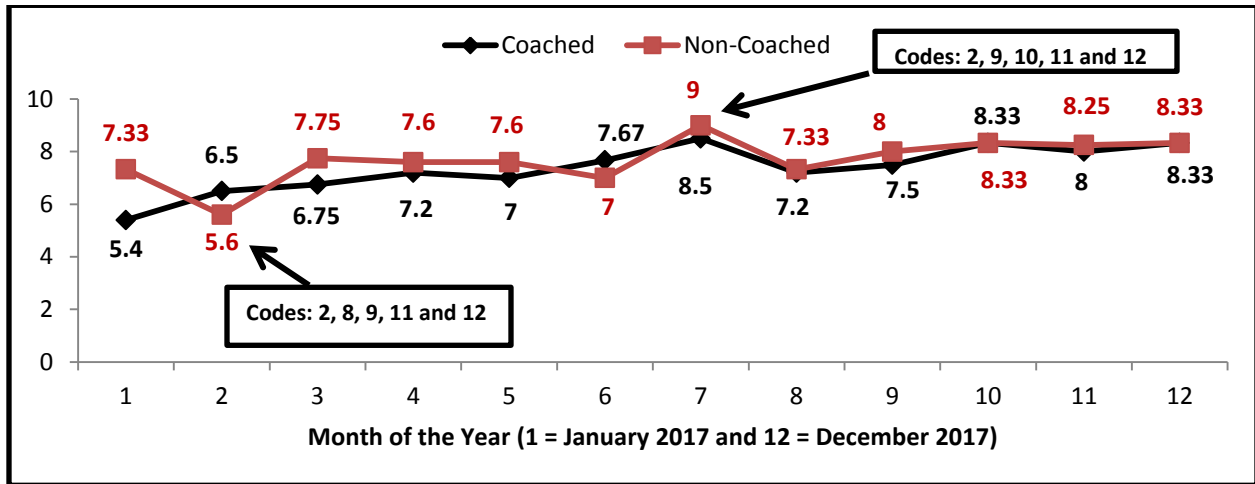
Figure 7E: Monthly "Clarity of Cues" Mean Ratings for Non/Coached Groups

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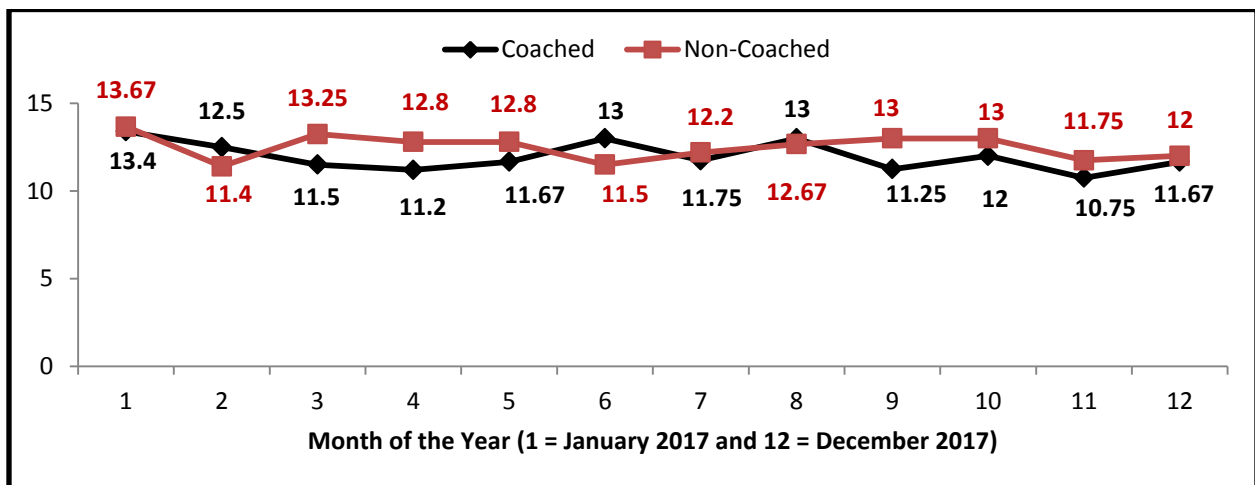
Figure 7F: Monthly "Responsiveness to Caregiver" Mean Ratings for Non/Coached Groups

Month of the Year (1 = January 2017 and 12 = December 2017)

Table 7G: Monthly NCAST Feeding Scale Total Score Mean Ratings for Non/Coached Groups

Month of the Year (1 = January 2017 and 12 = December 2017)

Shaw (03/02/2018)

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BEET-IT Scoring Spreadsheet (Study 4)

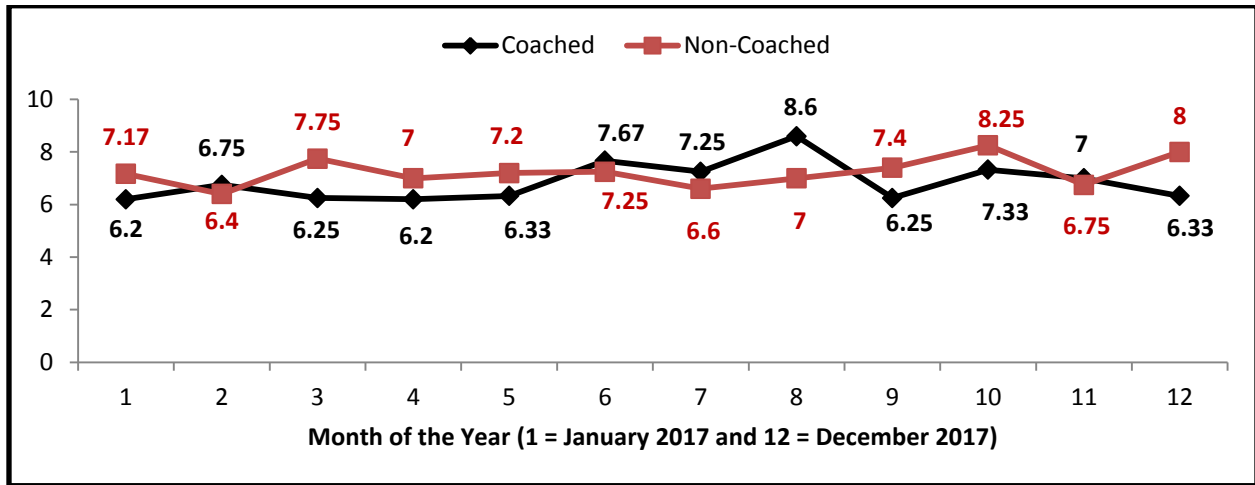| Subject	Age	TEXTURE 6-8 mos	9-12 mos	13-18 mos	TOTAL TEXTURE SCORE	HEALTHY 6-12 mos B/F; No SD	1 svg each	13-18 mos F/V	P	WG	Ca	SD/Snacks	TOTAL HEALTHY SCORE	6-12
	= coached group													
1b	9m26d		0		0	1	1						1	
1b	12m		1		1	1	1						1	
2	11m		1		1	1	1						1	
2	12m		1		1	1	0						0	
2	13m			1	1			0	1	0	1	1	1	
2	14m			1	1			0	1	0	0	1	0	
2	15m			1	1			0	1	0	0	1	0	
2	16m			1	1			0	0	0	0	1	0	
2	17m			1	1			0	0	0	0	1	0	
2	19m			1	1			0	0	0	0	0	1	
2	20m			1	1			0	1	0	1	1	1	
2	21m			1	1			0	1	0	0	1	0	
3	14m													
3	15m			1	1			0	1	0	1	0	0	
3	17m			1	1			1	1	0	1	0	1	
3	18m			1	1			0	1	0	1	1	1	
3	19m			1	1			0	1	0	1	1	1	
3	20m			1	1			1	1	0	1	1	1	
3	22m			1	1			0	1	0	1	1	1	
3	24m			1	1			0	1	0	1	1	1	
4	7m		1		1	1	0						0	
4	8m		1		1	1	0						0	
4	9m		1		1	1	0						0	
4	10m		1		1	1	0						0	
4	11m		1		1	1	1						1	
4	12m		1		1	1	0						0	
4	13m			1	1			0	1	0	1	1	1	
4	14m			1	1			0	1	0	1	1	1	
4	15m			1	1			1	1	0	1	1	1	
4	16m			1	1			1	1	0	1	1	1	
4	17m			1	1			1	1	0	1	1	1	
5	6m	1			1	1	1						1	
5	13m			1	1			0	0	0	1	0	0	
5	14m			1	1			0	1	1	1	1	1	
5	15m			1	1			0	1	0	1	0	0	
5	16m			1	1			0	1	0	1	0	0	
5	17m			1	1			0	1	0	1	1	1	
9	9m		1		1	1	0						0	
9	10m		1		1	0	1						0	
9	12m		1		1	0	1						0	
9	13m			1	1			0	1	0	1	0	0	
9	14m			1	1			0	1	0	1	1	1	
10	6m	0			0	1	0						0	
10	8m	1			1	1	0						0	
10	9m		0		0	1	1						1	

Study 4 BEET IT Scoring Spreadsheet

BEET-IT Scoring Spreadsheet (Study 4)

Subject	Age	TEXTURE 6-8 mos	9-12 mos	13-18 mos	TOTAL TEXTURE SCORE	HEALTHY 6-12 mos B/F; No SD	1 svg each	HEALTHY 13-18 mos F/V	P	WG	Ca	SD/Snacks	TOTAL HEALTHY SCORE
10	12m		1		1	0	1						0
10	13m			0	0			1	1	0	0	1	1
11	11m		1		1	1	1						1
11	12m		1		1	0	1						0
11	13m			1	1			1	1	0	1	1	1
11	14m			1	1			0	1	0	1	1	1
11	16m			1	1			1	1	0	1	1	1
11	17m			1	1			1	1	0	1	1	1
11	19m			1	1			1	1	0	1	1	1
11	20m			1	1			1	1	0	1	0	1
12	13m			0	0			0	0	0	1	1	0
12	14m			1	1			1	1	0	0	0	0
12	15m			1	1			1	1	0	1	0	1
12	16m			1	1			1	1	0	1	0	1
12	18m			1	1			1	1	0	1	1	1
12	19m			1	1			1	1	0	1	1	1
12	20m			1	1			1	1	0	1	1	1
12	22m			1	1			0	1	0	1	1	1
12	23m			1	1			1	1	0	1	1	1

IOA SCORES		Total Texture Score	Total Healthy Score	Total Variety Score	IOA
#4 Alena	10m	1	0	1	
#4 Jamie	10m	1	0	1	100%
#11 Alena	16m	1	1	1	
#11 Jamie	16m	1	1	1	100%

Study 4 BEET IT Scoring Spreadsheet

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Study 5 Caregiver/Child Mealtime Behaviors

Participant #/Month _____ Date_____ Staff Name_____

During the mealtime, the caregiver:

1.	Creates a safe environment for the child to eat with supported seating for mealtime success.	Yes	No
2.	Establishes a consistent routine for mealtime with a clear beginning, middle, and end in a given location.	Yes	No
3.	Lets child know what comes next.	Yes	No
4.	Eats and/or drinks with child.	Yes	No
5.	Reads the child's cues around **routines**.	Yes	No
6.	Reads the child's cues around **foods**.	Yes	No
7.	Reads the child's curs around **stopping/starting meal.**	Yes	No
8.	Provides a variety of foods that match child's functional and nutritional needs.	Yes	No
9.	Gives child access to utensils and demonstrate developmentally appropriate use.	Yes	No
10.	Provides more than two opportunities to practice skills.	Yes	No
11.	Has fun or laughs when child is learning a new skill.	Yes	No
12.	Uses visual, tactual, and auditory cues during mealtime routines	Yes	No
13.	Interacts with the child, providing verbal descriptors and narration regarding mealtime and conversations.	Yes	No
14.	Provides an opportunity for food exploration, including messy play.	Yes	No
15.	Asks questions relevant to the mealtime routine.	Yes	No

During the mealtime, the child:

16.	Enjoys the routine and has fun.	Yes	No
17.	Explores a variety of food textures.	Yes	No
18.	Tastes a variety of foods.	Yes	No
19.	Participates in mealtime interaction/communication using clear cues.	Yes	No
20.	Initiates independence at mealtime with foods and utensils	Yes	No
21.	Demonstrates familiarity with mealtime equipment (i.e., utensils, cups)	Yes	No

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Study 5 Caregiver/Child Mealtime Behaviors

Participant #/Month _____ Date _____ Staff Name_____

During the mealtime, the caregiver:

1.	Creates a safe environment for the child to eat with supported seating for mealtime success.	Yes	No
2.	Establishes a consistent routine for mealtime with a clear beginning, middle, and end in a given location.	Yes	No
3.	Lets child know what comes next.	Yes	No
4.	Eats and/or drinks with child.	Yes	No
5.	Reads the child's cues around **routines**.	Yes	No
6.	Reads the child's cues around **foods**.	Yes	No
7.	Reads the child's curs around **stopping/starting meal.**	Yes	No
8.	Provides a variety of foods that match child's functional and nutritional needs.	Yes	No
9.	Gives child access to utensils and demonstrate developmentally appropriate use.	Yes	No
10.	Provides more than two opportunities to practice skills.	Yes	No
11.	Has fun or laughs when child is learning a new skill.	Yes	No
12.	Uses visual, tactual, and auditory cues during mealtime routines	Yes	No
13.	Interacts with the child, providing verbal descriptors and narration regarding mealtime and conversations.	Yes	No
14.	Provides an opportunity for food exploration, including messy play.	Yes	No
15.	Asks questions relevant to the mealtime routine.	Yes	No

During the mealtime, the child:

16.	Enjoys the routine and has fun.	Yes	No
17.	Explores a variety of food textures.	Yes	No
18.	Tastes a variety of foods.	Yes	No
19.	Participates in mealtime interaction/communication using clear cues.	Yes	No
20.	Initiates independence at mealtime with foods and utensils	Yes	No
21.	Demonstrates familiarity with mealtime equipment (i.e., utensils, cups)	Yes	No

MRVI Intervention Study Three Supplemental Analysis

Coaching Practices Rating Scale (CPRS)
(Rush & Shelden, 2006)

All TSVI-EIs (n=12) were observed on video during home visits in order to determine how many early intervention coaching practices were incorporated into their visit. There were 91 videos scored ($\bar{x}$ = 7.5), designated in the table below as "opportunities" to demonstrate a specific practice. The MRVI Statistical Consultant expressed concern about the number of zero or absent behaviors scored for the CPRS (see **Attachment #2**), rendering the assessment unreliable for this study. A supplemental analysis examined the CPRS results item by item, calculating the proportion of opportunities when each behavior was observed. These results are shown in Table 1, for Coached, Non-Coached, and all TSVI-EIs.

Table 1. Proportion of CPRS Items Observed in Video Opportunities

CPRS Item	Proportion of Opportunities Observed		
	Coached TSVI-EIs (41 total opportunities)	Non-Coached TSVIs (50 total opportunities)	All TSVIs (91 total opportunities)
1. Acknowledged the learner's existing knowledge and abilities as the foundation for improving knowledge and skills.	.341	.360	.352
2. Interacted with the learner in a nonjudgmental and constructive manner during coaching conversations.	.683	.820	.857
3. Identified with the learner the targeted skills and a timeline for the coaching process.	.049	.180	.121
4. Developed with the learner a plan for action/practice necessary to achieve targeted skill(s) following each coaching conversation.	.098	.100	.099
5. Observed the learner demonstrate knowledge and understanding of the targeted skill(s) or practice(s).	.073	.120	.099

1

CPRS Item	Proportion of Opportunities Observed		
	Coached TSVI-EIs (41 total opportunities)	Non-Coached TSVIs (50 total opportunities)	All TSVIs (91 total opportunities)
6. Observed the learner's use of the targeted skill(s) or practice(s).	.146	.180	.165
7. Created opportunities for the learner to observe the coach and/or others model the target skill(s) or practice(s).	.073	.020	.044
8. Promoted use of multiple opportunities for the learner to practice implementation of the targeted skill(s) and practice(s) (e.g., role plays, in context).	.098	.100	.099
9. Used both planned and spontaneous opportunities to strengthen the learner's knowledge and skills.	.293	.180	.231
10. Asked probing questions to examine the learner's knowledge and abilities.	.488	.660	.582
11. Prompted learner reflection on his/her knowledge and use of the targeted skill(s) and practice(s) compared against research-based practice standards.	.071	.140	.088
12. Provided feedback about the learner's knowledge and skills following the learner's reflection on his/her performance.	.171	.180	.176
13. Provided and/or promoting access to new information and resources after the learner reflects on his/her performance.	.098	.180	.143
14. Engaged the learner in reflection on the usefulness, effectiveness, and need for continuation of coaching.	.024	.100	.066
Mean proportion for all items	**.193**	**.237**	**.223**

2

The proportion of opportunities when each CPRS practice was observed was quite low. The highest proportion for all TSVI-EIs was #2, *Interacted with the learner in a nonjudgmental and constructive manner during coaching conversations*. Consistent with other findings in Study Three, the group of TSVI-EIs who were coached by the Intervention Team during the first six months of the study performed no better than the Non-Coached group, except for item #9, *Used both planned and spontaneous opportunities to strengthen the learner's knowledge and skills*. While coaching practices were addressed in the MRVI training sessions, it appears that the training was insufficient to affect the practice of the TSVI-EIs participating in the study.

After discussion by Project Staff, we attributed this low implementation of early intervention best practices to the training that TSVIs receive in their personnel preparation programs. TSVIs are generally trained to work directly with students, rather than with adults, as occurs in early intervention (Council for Exceptional Children, 2015). Accordingly, training for Study Five was revised to include more emphasis on working with adult caregivers, and coaching practices were incorporated into the fidelity assessments as part of the iterative revision of the MRVI Intervention.

3

MEISR Analysis (December 2017)

The observation scale for the MEISR was changed for purposes of this study to reflect whether the skill was Not Observed, Inconsistently Observed, or Consistently Observed on each video for each child. MEISR authors assigned each item to a "starting age in months." For purposes of this analysis, the highest starting age where a skill was consistently observed is compared to the child's chronological age, whether or not *all* skills designated at that age were observed. Videos were not available for each child for each month. A plus sign (+) indicates progress from the previous analysis point; a minus sign (-) indicates loss of progress.

These children demonstrated progress using the MEISR: #3, 4, 9, 10, 11, 12

These children demonstrated no progress or loss of progress using the MEISR: #1b, 5

In summary, the majority of children demonstrated progress as measured by the MEISR, although "progress" was relative and differed in degree for each child. There appears to be no difference in coached vs. non-coached groups.

The MEISR is not a standardized instrument and appears insensitive to the behaviors observed informally on the videos of the children involved in the study. For these reasons, a criterion-referenced checklist of independent eating behaviors is being created for use in Study 5 in hopes that it might capture behaviors with greater precision and permit better analysis of the results.

ID#	Beginning		June 2017		December 2017	
	CA	MEISR Starting Age	CA	MEISR Starting Age	CA	MEISR Starting Age
1**	12	0	15 (April)	6 (+)		
1b*			8	8	14	8
2	11	8	16	18 (+)	22	23 (+)
3	14	8	18	23 (+)	24	23
4	7	7	12	12 (+)	19	18 (+)
5	7	0	12	12 (+)	17 (November)	8 (-)
6**	12	0				
7	9	0				
8**	7	6	8 (February)	7 (+)		
9	8	6	13	8 (+)	17 (October)	10 (+)
10	5	0	10	8 (+)	14 (October)	12 (+)
11	10	8	14	12 (+)	21	23 (+)
12	12	8	17	10 (+)	23	18 (+)

*This child joined the project in June 2017.
**These children withdrew from the project.
Blue shading indicates coaching was received by TSVIs from January to June.

MRVI Intervention Study Four Supplemental Analysis

**Erhardt Development Prehension Assessment (EDPA)**

Explanation of Data:

1. Data sheets were scored by an independent reviewer for the first scoring and the last scoring within the January-December 2017 time period.
2. Participants who were no longer providing data were removed from the table.
3. Score sheets were reviewed by Carol Spicer, Consultant (Occupational Therapist) to determine age levels in months indicated by the scores.
4. Table was completed using the variables of Age in Months, First Scoring and Final Scoring (see below)

Table 1. EDPA Results for Participants who Completed Study Four

	Age in Months	First Scoring	Final Scoring
001b	14	7	10
2	22	12	15
3	26	12	12
4	18	6	12
5	17	7	8
9	18	6	15
10	14	-1	15
11	21	7	15
12	24	10	15

5. Chart created to show:
    - Age in months at the time of the Final Scoring (Blue Data Line)
    - Developmental Level at (January) First Scoring (Green column)
    - Developmental Level at (December) Final Scoring (Yellow Column)

1

Figure 1. Graphic Representation of EDPA Results
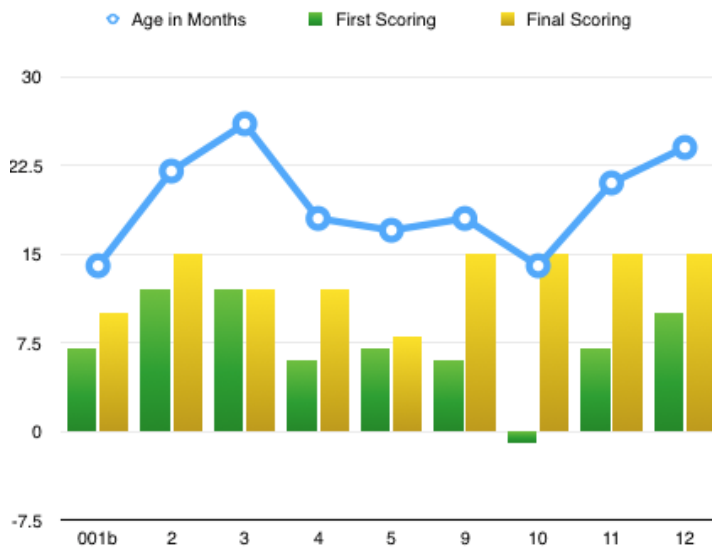
The results of this analysis indicate that all children made progress as measured by the EDPA; some made more progress than others. Only one child was close to developmental age on the EDPA (#10). All other children were demonstrating developmental hand skills below their chronological age.

2

MRVI *EXPERIMENTAL GROUP* Video Protocol

Goals: To see how the caregiver and baby work together during mealtimes;

To see how you convey the MRVI Intervention to the family you are working with; AND

To see how the caregiver implements the MRVI intervention.

For the first (baseline) video, <mark>due no later than February 15, 2018</mark>:

- Tell the caregiver that you want to see how a typical feeding/mealtime happens at his/her home with the baby. Tell him or her that you just want to record what it's like, and that you want to see the whole process, from beginning to end.
- Tell the caregiver that this is going to be awkward and unnatural, but that you are not going to converse with him or her until the end of the meal. Ask him or her to talk and interact with the baby as normally as possible.
- Remind the caregiver that we will share all of the videos with him or her at the end of the project.
- Begin the video by stating your identification number and the month, day, and year of the recording. Indicate who the caregiver is ("Today's feeding is with [mom, dad, grandparent, babysitter]"), and whether this is breakfast, lunch, or a snack.
- At the end of the meal/snack/feeding, when the baby is finished eating, STOP recording.
- Tell the caregiver what to expect for the next 11 months. Go ahead and provide comments and suggestions, implementing your typical practice.

For the monthly videos after baseline, <mark>due on the 25th-28th of every month, starting February 2018</mark>:

- Begin the video by stating your **identification number** and the **month, day, and year** of the recording. **Indicate who the caregiver is** ("Today's video is with [mom, dad, grandparent, babysitter]"), and whether this is breakfast, lunch, or a snack.
- Explain/remind the caregiver that the first 15 minutes will involve meal preparation (if possible) and feedings/mealtimes. Ask him or her to do what he or she usually does.
- Explain/remind the caregiver that after 15 minutes you will join the conversation and keep recording until the feeding/snack/meal has ended. Tell him or her that you want to record the entire mealtime routine – preparation (from the point the baby is placed in the high chair), ending, and cleaning up.

- Once you join the conversation, follow your early intervention practice with the caregiver and baby, asking the caregiver how things are going, demonstrating strategies, making suggestions, eliciting comments from the caregiver – whatever you normally do. Use your prior knowledge and experience, combined with what you have gained from the MRVI Intervention training.
- Allow the feedings/meal/snack to proceed to its normal conclusion before stopping the recording. This should last no longer than 30 minutes, but may occasionally take longer.

Things to remember:

- Try to focus your recording device on the baby and caregiver, capturing facial expressions and the baby's hand use.
- Zoom in on the baby's hands at your discretion to show a specific grasp or utensil use.
- The camera should be at the baby's and caregiver's eye level, not particularly aimed up or down.
- You do not need to track the caregiver around the room/kitchen.
- Do not talk for the first 15 minutes.
- Fill the screen with the baby and caregiver for the first 15 minutes, then pull back when you begin to interact.
- Try to have as little background noise as possible. Explain to the caregiver the importance of allowing the child to focus on his or her voice during mealtimes.
- Use a tripod or other stand to hold the recording device (it's easier on you!). If you don't have a tripod, we will purchase one for you.
- For each video, we would like to see the transition before and after the meal if possible.
- IF YOU SEE A SAFETY ISSUE OR SOMETHING DANGEROUS – DO NOT HESITATE TO INTERRUPT.

KAF 3-27-18

MRVI *BUSINESS-AS-USUAL GROUP* Video Protocol

Goal: To document child mealtime progress.

For the first (baseline) video, <mark>due as soon as possible after consent is given by the family</mark>:

- Tell the caregiver that you want to see how a typical feeding/mealtime happens at his/her home with the baby. Tell him or her that you just want to record what it's like, and that you want to see the whole process, **from beginning to end**.
- Tell the caregiver that this is going to be awkward and unnatural, but that you are not going to converse with him or her until the end of the meal. Ask him or her to talk and interact with the baby as normally as possible.
- Remind the caregiver that we will share all of the videos with him or her at the end of the project.
- Begin the video by stating your **identification number** and the **month, day, and year** of the recording. **Indicate who the caregiver is** ("Today's feeding is with [mom, dad, grandparent, babysitter]"), and whether this is breakfast, lunch, or a snack.
- At the end of the meal/snack/feeding, when the baby is finished eating, STOP recording.
- Tell the caregiver what to expect for the next 9-12 months. Go ahead and provide comments and suggestions, implementing your typical practice.

For the monthly videos after baseline, <mark>due on the 25th-28th of every month</mark>:

- Begin the video by stating your **identification number** and the **month, day, and year** of the recording. **Indicate who the caregiver is** ("Today's video is with [mom, dad, grandparent, babysitter]"), and whether this is breakfast, lunch, or a snack.
- Explain/remind the caregiver that the first 15 minutes will involve meal preparation (if possible) and feedings/mealtimes. Ask him or her to do what he or she usually does.
- Explain/remind the caregiver that after 15 minutes you will join the conversation and keep recording until the feeding/snack/meal has ended. Tell him or her that you want to record the entire mealtime routine – preparation (from the point the baby is placed in the high chair), ending, and cleaning up.
- Once you join the conversation, follow your regular early intervention practice with the caregiver and baby – whatever you normally do.

- Allow the feedings/meal/snack to proceed to its normal conclusion before stopping the recording. This should last no longer than 30 minutes, but may occasionally take longer, especially as the child grows older.

Things to remember:

- Do not talk for the first 15 minutes.
- Focus your recording device on the baby and caregiver, capturing facial expressions of caregiver and baby and the baby's hand use.
- *Be sure to capture the caregiver*, making sure his/her *face* is in the video, even if it is from the side*.* Try to have the caregiver and the child in the video at all times, except when zooming in briefly to catch hand movements of the child.
- Zoom in on the baby's hands at your discretion to show a specific grasp or utensil use. Brief close ups are needed from time to time to clearly show the child's hand movements for picking up foods, utensil and cup use, play that might include finger play, toys, and touching between caregiver and child.
- The camera should be at the baby's and caregiver's eye level, not looking up or looking down.
- A wider angle is sometimes needed to include the child, the person feeding, and the positioning of the child.
- You do not need to track the caregiver around the room/kitchen.
- Fill the screen with the baby and caregiver for the first 15 minutes, then pull back when you begin to interact, as necessary.
- Try to have as little background noise as possible. Explain to the caregiver the importance of allowing the child to focus on his or her voice during mealtimes.
- Use a tripod or other stand to hold the recording device (it's easier on you!). If you don't have a tripod, we will purchase one for you. Let Kay know (kay.ferrell@unco.edu).
- For each video, we would like to see the transition before and after the meal if possible.
- IF YOU SEE A SAFETY ISSUE OR SOMETHING DANGEROUS – DO NOT HESITATE TO INTERRUPT.
- We understand that there are many things that you discuss with the family during a home visit. We are only interested in your recording the part of the discussion where you are focusing on mealtime.

KAF 3-27-18

WREIC Presentation
Phoenix, AZ, June 15, 2017

Total evaluations submitted: 50

n = 50   Have you ever attended a presentation on the MRVI Intervention Project or the Eating Upside Down project before?
> n = 49   No, this is the first time
> Yes, Eating Upside Down
> Yes, the MRVI Intervention Project
> n = 1   Yes, I am an MRVI Participant

Comments:
- A nice review and re-cap from initial training.
- Enjoyed video & discussion regarding video – offering suggestions.
- Good information.
- Good presentation.
- I am interest in hearing about Eating Upside Down. Record presentations have them available.
- Informative session & the group participation was helpful.
- Only have one speaker. One speaker kept talking over the other one.
- Raised awareness with feeding for babies with VI
- So glad to finally see it!
- The information presente4d today was <u>very</u> helpful! So much practical info. that I will be able to use with my families.
- Very clear. Lots of distinct strategies given.
- Very fun and warm presenters.

n = 50   Is the role of the TSVI-EI in supporting caregivers at mealtime clear to you after today's presentation?
> n = 50   Yes, I understand the role of the TSVI-EI more clearly now
> No, the role of the TSVI-EI is still not clear to me

Comments:
- Coach? Provide resources?
- Good info. About tactile development, using multiple spoons. Excellent presentation – great info. esp. sitting side by side teaching chewing.
- I appreciated learning the data to use to educate parents.
- I had no idea how much I am missing not helping with mealtime
- It was a great learning session.
- Not too much new information, would suggest going deeper when addressing TVIs.
- Presenter was animated & gave good strategies.
- The strategies were helpful but not overwhelming.
- There are new strategies I want to try.
- This was wonderful! Thank you!

1

- Very clear!
- Wonderful outline/points – co-presenting from different fields <u>really</u> demonstrates importance of <u>asking</u> each other for help/info!

n = 46   How did you feel about the Mealtime Environment Activity? Was it helpful for your work in creating mealtime routines for families?
- n = 6   Yes
- All information was great! I will share it with my co-workers.
- As a parent of a child with a visual impairment, it has worked for us to create a routine for our daughter and keep things consistent.
- Awesome! It could be an easy activity to be brought into homes to begin great conversations & reflective thinking by parents.
- Definitely helpful. Got some great ideas on how to enhance the mealtime environment.
- Didn't quite have time to finish discussion! BUT – the conversation & info from presentation really <u>validates</u> my approach to feeding preschoolers, too!
- Good activity – I have some ideas to try with my family.
- Great presentation.
- Helped me to think about location, where parents & children should sit for meals more.
- Helpful to talk about a child someone was working with and brainstorming ideas/strategies, developing routines.
- I didn't do the activity. My partner and I spoke about particular students we're serving.
- I feel like it was helpful in considering the environment where my kids receive services.
- Important application activity
- It was a good activity.
- It was extremely helpful. This is an area of major concern for some/most of my EI families.
- It was hard to come up with something on the spot.
- It was very informative and very helpful in creating mealtime routines.
- It would be helpful if you work or have in mind a child. We worked as a group saying it could be used for any child.
- It's a great idea/concept
- Nice to discuss and share with colleagues.
- No – It would have been more effective if we had a particular child we could think about together. Considering a disorder was minimally inspiring.
- Not enough time to discuss & complete activity.
- Not interested in group activities.
- Sharing with others, brainstorming. Would have needed a little more time.
- Somewhat – needed more time to complete activity.
- This activity didn't really work for me. This activity may need to be revamped.
- This presentation was very relevant to a family in particular I work with. I'm excited to implement the strategies I learned today.
- This will help with feeding with this population. Couples well with other feeding strategies (*undecipherable*)
- Very helpful as a new TVI in EI.
- Very helpful! Great discussions in our group.

2

- We hadn't talked much about the physical environment so this seemed a bit out of the blue. It maybe would have been more effective to have us make a list of new ideas or new learning?
- OK. Need more examples & practice in creating mealtime routines.
- Yes! I know what my next lesson plan will be.
- Yes! It was helpful to chat with other professionals already doing it.
- Yes, having input and experience as a team.
- Yes, helpful in creating mealtime routines. I wish there would have been more info. on <u>very</u> tactile sensory students.
- Yes, it helped me to look at the routine from a different perspective. It gave me some other ideas to consider.
- Yes, it was good to consider my families and how I could implement routines with my kids.
- Yes, it was useful.
- Yes, more time would be nice next time!
- Yes, need more exploratory time

n = 39 How did you feel about participating in the Anatomy of a Mealtime activity? Did it help you to think about what a real mealtime looks like?
- n = 5   Yes
- Activity wasn't that useful. Video was excellent.
- Another important way of applying knowledge – I'm looking forward to working with families and now have additional resources to apply. Very important presentation. Thank you.
- As a parent of 2 children who've grown up happy, healthy, well founded – I take it for granted that not all parents know how to provide a mealtime that's engaging & educational.
- Didn't get to this activity.
- Good practice for giving feedback to parents & remembering to give lots of positive feedback as well as tips/strategies.
- Good to see mom/child during mealtime and understanding positive aspects & seeing what else could be done.
- Good. I think it was shorten due to time constraints so would have been nice to discuss other examples.
- Great video! Good discussion – give more specific examples of TVI intervention.
- I also enjoyed the specifics of this activity. Making it all applicable.
- I enjoyed participating in it, since I was able to get ideas from it. Helpful to think about real mealtimes.
- I liked seeing the video – would liked to have see an exceptional one to go with it.
- I think it was realistic of how most parents feed their children.
- I was amazed at the video shown of mom feeding baby, how little she spoke to and identified what she was doing. Definitely will encourage families to use their words in getting the description of what she was doing with the baby.
- It helped me think more deeply about how to help my families
- It was a good idea to participate in the mealtime activity. Yes, it helped to think about what real mealtime looks like.
- It was great to see it in action and get ideas for my own kids.

3

- It was great, and yes expectation for mealtime.
- It was helpful to look at the positive pieces and what can be worked on and improved with coaching. Strategies & ideas came from participants watching. It is important to watch a family go through an actual mealtime in order to know what to work on.
- The videos were beneficial as well as the small group activity. I'd like to participate in a longer workshop. Very beneficial!
- This was a good video. I actually want to video a mealtime to review & also show progress over time.
- Understand it more to have a set mealtime place. Yes.
- Very helpful. Thank you!
- We did not do.
- We were able to brainstorm on one of our children as a team & decide on next steps.
- Yes – helpful to take to the EI team.
- Yes, again I'd love to spend more time dissecting mealtime with you!
- Yes, but did not have enough time to discuss different possibilities. Liked the suggestions.
- Yes, I liked the videos.
- Yes, it helped.
- Yes, it was nice to hear about other people's experiences and some different ideas to try.
- Yes, the video demonstrated both positive and negative participation.
- Yes, very helpful to see a real mealtime. Great input from the group.
- Yes. It gave me a chance to see where/how I could make suggestions or give praise to parents.
- Yes. The videos were all very powerful and relevant.

n = 39   Did the presentation meet your expectations regarding content?
- n = 24   Yes
- n = 1   Yes! *[with exclamation point]*
- Absolutely – would love to have a ½ day to hear more.
- Exceeded
- Good, but not interested in group activities.
- I thought there was going to be more info. on the lighting, noise, vision req., senses & positioning.
- More than met!
- No. I would like more videos, and materials on resources. Also, presenters spoke over each other which was distracting.
- NO. Was hoping for more today. But, super excited about the MRVI intervention.
- Yes – exceeded my expectations! I learned new content, strategies, & about research.
- Yes – it gave me information to give my families and other providers.
- Yes it did
- Yes! I was curious and engaged the whole time
- Yes, very much
- Yes. Very helpful ideas.
- Yes. Wonderful info!

4

n = 34   **Was the presentation accessible to you?**
        Yes   n = 34

n = 33   **What could the presenters have added to the presentation to improve your experience?**
- n = 3   – *[clearly meant nothing could be added]*
- 5 more minutes on the mealtime environment activity.
- A little more time and ideas of tools to use
- Enjoyed the material presented very much. Got some new ideas.
- Great presentation. Loved the videos.
- How to address mealtime for <u>extremely</u> tactile sensitive children/students.
- I would love to see more data as the study progresses.
- I'd like to learn how I can be part of the study.
- It was 1.5 hours, but it was very engaging & I could've handled a longer session.
- It was full of information, activities and video.
- Longer time -- more information presented
- More examples
- More examples & hands-on activities.
- More picture/video examples
- More specifics or tips from TVIs, EIs, etc.
- More techniques used to work through textures of foods
- More time for environmental/anatomy activities to get specific ideas
- More time for suggestion.
- More time for the activities and discussions.
- More videos, and a lot of information I felt was common knowledge. New information would be nice.
- More videos.
- No
- No since it was excellent
- Nothing at this time
- Presentation was good!
- Provided the powerpoint. A list of typical skills provided to participants. You just mentioned the resources at the website – would have helped to hear that at the beginning.
- Pull in more of the TVI strategies. Maybe a resource or HO *[handout]*? I know majority are people who are EI, TVI (I'm SLP/Feeding).
- Really like the real life videos – adds a lot information.
- Talk about specific eye diagnoses and feeding difficulties.
- We could have had a longer session!
- Yes, provided specific feedback to ideas.

n = 36   **Were the presenters responsive to your questions about creating Mealtime Routines for children with VI?**
- n = 22   Yes
- n = 5   Yes!   *[with exclamation point]*
- n = 2   Absolutely!

5

- Answered all questions clearly & kept the session focus & moving.
- Not enough time for Q & A
- They were very good about answering questions and discussion.
- Too short not much time for questions
- Very responsive to all questions.
- Yes – they were great!
- Yes, always informative.

Additional comments not attributed to a specific question:
- Thank you!
- Best seminar so far!!
- You guys rock ☺ Great end video – cried (again) watching!
- Thanks – you are wonderful

6

R324A160139

Development of an Assessment Tool to Measure Intake at Weaning

Alena Clark, PhD, MPH, RD, CLC, Jamie Erskine, PhD, RDN

Nutrition & Dietetics Program; School of Human Services; University of Northern Colorado, Greeley, CO

Abstract

Background: Introduction of solid foods has been associated with growth, development, socialization, decreased feeding difficulties, and variety of food preferences. Several factors may create challenges to successful weaning. Research indicates texture acceptance and dietary variety are affected by visual impairment. Our objective is to describe the purpose and development of the BEET IT© **(Baby Early Eating Tool of Intake and Texture)** tool for obtaining data on variety and texture of foods and beverages infants/children consume.

Methods: BEET IT© was developed for a study, Mealtime Routines for Visual Impairment (MRVI) Intervention, a method to foster independent eating in infants/children with visual impairment. BEET IT© was adapted from the food frequency questionnaire concept with a focus on food acceptance/rejection, texture, and exposure to food variety. A literature review revealed no available instrument that assessed these objectives.

Results: BEET IT© was tested on eight parent-infant/child dyads to determine if the tool was comprehensive, manageable, and accurate. The interview required thirty minutes to complete and parents felt questions were understandable. The pilot resulted in photographs added to the electronic version of the tool and a reporting form supplied before the interview to enhance item recall.

Conclusion: A tool to measure exposure and intake of food textures and variety by infants will inform interventions for successful weaning in children with visual impairment and potentially others with special needs.

Introduction

Previous research indicates that individuals with visual impairments are at greater risk for acquiring eating disorders in their teen or adult years, developing poor nutritional habits, and/or demonstrating delayed independent self-help skills while eating (*Celeste-Williams, 2010; Lewis, 2002; Papadopoulous, 2011; Smyth, 2014*). Infants and toddlers with visual impairment represent a low-prevalence population, yet have similar feeding concerns as other special health populations (*Benfer, 2015*).

The Mealtime Routines for Visual Impairment (MRVI) is a research project that is investigating the effect of using Early Intervention (EI) to guide the development of appropriate routines and skills to foster independent eating in infants and toddlers with visual impairment. An interdisciplinary team approach is being used including EI personnel (EIs), child development and special education specialists, speech-language pathologists, occupational therapists, registered dietitian nutritionists, a physician, statistician and a computer programmer.

Assessments Administered:
- Anthropometric Measurements
- Coaching Practices Rating Scale
- Family Centered Practices Checklist
- Nursing Child Assessment Feeding Scale
- Erhardt Developmental Prehension Assessment
- Parent Confidence Scale
- Caregiver Evaluations
- BEET IT©

Methods

Objective: Determine baseline intake and changes occurring in developmentally appropriate intake with exposure to the intervention
- Desired an assessment tool that focuses on food/beverage acceptance or refusal, textures, and variety of food intake
- Semi-quantitative data was desired to determine if portions offered are appropriate for age and to use as a screening cross-check if growth parameters were unusual
- Determined that a food frequency questionnaire (FFQ) model would meet these criteria (*Fein, 2008*)
- Following a thorough literature review, a tool targeting infants and toddlers that measured the identified criteria did not exist
- Examples of food/beverage choices and portion sizes appropriate for this age group are included in BEET IT©
- Tool was originally designed to be used by an interviewer
- BEET IT© was pilot tested for clarity, feasibility in terms of time required, and comprehensiveness on eight caregivers of infants or toddlers
- BEET IT© was then transformed to an electronic version that EIs use to interview caregivers and record responses on site on electronic tablets

Picture 1: *Cheek-to-Cheek* Chewing Method to Encourage Intake of Solids

Data Summary Themes

Findings from 8 monthly data collections from 12 study participants indicated that some additional common foods needed to be added, textures and food variety can be determined by a truncated number of choices to be determined, and the tool is user-friendly.

Data has informed the researchers of the following:
- Progression of texture acceptance (e.g. from pureed to chunky to regular textures)
- Variety and portion sizes of foods offered by caregivers
- Color contrast food options that are healthier choices
- Exposure to food before acceptance
- Intake patterns that identify with health conditions associated with visual impairment

Conclusions

- Next step is to validate the tool using a scoring system that defines degree of variety, healthy food choices, and texture appropriate for age
- Monthly mealtime videos will be used to randomly compare foods and textures offered with those reported on BEET IT© for accuracy
- Random comparison of foods offered in the videos and reported on BEET IT© will be conducted
- Reliability is being tested by two RDNs evaluating intake

- **Validity and reliability of the BEET IT© Tool are essential to establish with visually impaired children**
- **In the future, efficacy of BEET IT© for other specialized pediatric populations will be determined**
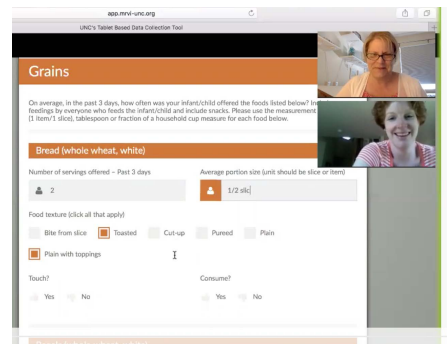
Picture 2: BEET IT© Interview Between Caregiver & TSVI-EI

An Intervention for Infants and Toddlers with Visual Impairment:
Independence through the Mealtime Routines Model

Kay Alicyn Ferrell, Ph.D., Jamie Erskine, Ph.D., RD, Catherine Smyth, M.S.Ed.
School of Special Education and School of Human Sciences

Assumptions

1. Adults who foster a nurturing social relationship and provide healthy food choices and nutrition are participating in critical activities to prepare a child's early brain development for future academic skills (Center for the Developing Child, 2010).

2. Families of young children with significant visual impairment benefit from intervention in the areas of feeding and eating development (Ferrell et al., 1998; Smyth et al., 2014).

3. Family Systems theory (Christian, 2006) and the science of child development (Shonkoff, 2012) supports building the capacities of adults through coaching (Kemp & Turnbull, 2014) to improve child outcomes in learning and relationship building.

Project Goal:

Iteratively develop the Mealtime Routines--Visual Impairment (MRVI) Intervention, a targeted intervention intended to guide and change early childhood practitioner knowledge and skills about the development of appropriate routines, interactions, and skills to foster independent eating in young children with visual impairment.

Study One: Researchers collected information on what Early Intervention professionals already know about typical mealtime development skills through an online survey.

- 63% of 197 respondents indicated that over half of the young children with visual impairment on their caseloads experienced mealtime challenges

- 62% of the respondents felt they did not have sufficient training or experience to support families in the area of mealtime routines

Study Two: Trainers used evidence-based professional development practices (Tell-Show-Try-Apply) to improve knowledge and skills of practitioner participants about typical mealtime development.

Practitioners developed 85% mastery of data collection processes and online resources that support MRVI Intervention sessions.

Practitioners demonstrated application of adaptive strategies and family-centered practices in a recorded role-play exercise using a mealtime scenario.

Study Three: The MRVI project collects weekly self-reflection practitioner impression journals on the success and challenges of the MRVI Intervention.

Practitioners are encouraged to share family-centered "Idea Sheets" with parents to determine mealtime routines that will guide MRVI Intervention sessions.

The MRVI project measures use of family-centered practices and coaching support in the natural environment of the home.

Practitioners are monitored monthly on their implementation of the MRVI Intervention with fidelity.

Half of the practitioners receive weekly coaching and half of them do not. The need for this intensive interaction will be determined for future inclusion in the MRVI Intervention.

Study Four: Research Team collects data to document change in children and family mealtime routines performance, investigating:

- Parental self-efficacy in meeting the developmental mealtime routine needs of the child with visual impairment
- Variety of healthy food choices
- Use of age-expected utensil skills
- Caregiver/family engagement during MRVI Intervention

Study Five: The final version of the MRVI Intervention will be used in a pilot study as an underpowered randomized controlled trial with new participants to determine promise.

MRVI INTERVENTION
UNIVERSITY OF NORTHERN COLORADO

Supporting Family Mealtime Routines Through the Practitioner's Voice:
Journal Entries and Implementation

Hong Phangia Dewald, M.A., COMS & Catherine Smyth, Ph.D.
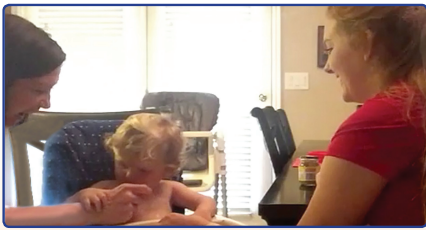
Purpose

The Mealtime Routine Visual Impairment (MRVI) Intervention seeks to create an evidence- and practice-based intervention that trains early intervention (EI) practitioners to work with families on positive mealtime routines for infants and toddlers with visual impairment. Young children with visual impairment and their families often face challenges with feeding and mealtimes due to the children's inability to observe and imitate mealtime skills and to engage in positive social interactions through eye contact with their caregivers. Mealtime routines are important in fostering nurturing social relationships and promoting the development of behaviors for increased independence in children as they enter early childhood inclusive settings.

Objectives: The collection of qualitative data is critical in expanding researcher knowledge about the key components of the intervention and the project. The MRVI Intervention project is federally funded research that seeks to develop, guide, and change the knowledge and skills of teachers of students with visual impairment in early intervention (TSVI-EI) in the area of mealtime routines and interactions with young children with visual impairment. Throughout the project's iterative development process, TSVI-EIs were asked to reflect on the assessment tools, online resources, and content they used with families in the natural environment (i.e., the home). TSVI-EI journal entries were collected and analyzed monthly using a content analysis method to provide insight into the MRVI Intervention project through the practitioner's voice.

Methods: Practitioner impression journals (PIJs) (Young et al., 2015) were used in this project to provide members of the project research team a unique perspective of what was transpiring out in the field with the TSVI-EIs and how the MRVI Intervention was working with families.

Text responses were collected by questions in an online course in a learning management system by Instructure, and the project coordinator and graduate research assistant independently analyzed the content into themes. In content analysis (Johnson & LaMontagne, 1993), qualitative themes are created as responses were read and grouped together based on similar characteristics. A total of 14 final themes were identified by the independent raters. Thereafter, all future responses are place into the existing theme categories until no new themes were required. A Kappa of .60 was required to accept interrater agreement or the themes were discussed and reviewed until agreement was determined.

During the MRVI Intervention, 12 TSVI-EIs were asked to share their thoughts every week in their PIJs by answering the following three questions:
1. Tell us something that you learned this week that was a surprise. What are your thoughts about why it was a surprise for you?
2. What have you learned this week that you feel was a success for you during the use of the MRVI Intervention with families? Why do you think this?
3. What have you learned this week that you feel was a challenge for you during the use of the MRVI Intervention with families? Why do you think this?

The following 14 themes were identified to categorize all of the PIJs collected throughout the first year of the MRVI Intervention Project:

Technology/Time/Organization:
- Providers indicate whether they are currently struggling or successful with MRVI Intervention technology, data collection due dates, or the ability to complete required tasks.

Interactions with Families:
- Providers getting to know and building rapport with families.
- Increased caregiver involvement and engagement during meal time visit.
- Conversations that do not include MRVI Intervention practices.

EI Challenges:
- Issues that are not specific to the MRVI Intervention.

Everything Is Fine:
- No challenges, everything going as it should be.

Working with the EI Team:
- Interactions with other providers in early intervention.

Family Routines as We See it:
- Learning what families have already done and are trying.

Use of the MRVI Intervention in Practice:
- Implementation of the MRVI Intervention strategies.

Use of the MRVI Intervention Tools:
- Accessing forms, online resources, use of equipment purchased by MRVI Intervention Project.

Increased Practitioner Confidence:
- Practitioners recognize or indicate they were able to successfully answer family questions, support mealtime needs, or consult with other members of the EI team.

What to Do Next:
- Practitioners are "thinking aloud" to indicate uncertainty or frustration on how to support families.
- They may answer their own question by thinking about looking for resources, etc.

Seeing Progress:
- Evidence of child/family knowledge and skills moving forward.

Need More Resources:
- Provider specifically requests a resource on some aspect of the MRVI Intervention.

Self-Pacing:
- Provider recognized that she/he cannot share everything at once with family.

Differences Across Caregivers:
- Provider observes differences at mealtime depending on caregiver.

Results:

Response rate: Overall practitioner responses (39%) were low, ranging from 60% in the first month to 23% over the summer. It is important to note that the same participants were more likely to respond every week and some participants never submitted responses. As weekly reminders were sent out to all participants to submit to the PIJs, it is thought that individual differences in reflective practice could affect the response rate.

Interrater Agreement: Over a ten-month period, inter-rater agreement only fell below the required Kappa of .60 four times. Once on Question 1 (May), once on Question 2 (May) and twice on Question 3 (March and September). With the exception of the final poor agreement on Question 3, agreement was raised with the addition of an additional theme. All themes were added to the content analysis by May 2017.

Important Thematic Trends: Initially, responses focused on the use of **data tools and video submission concerns**.

"I did my first video with the family this week and it was surprising to me all of the things there is to think about during the feeding to discuss with the family"

"The new Canvas Course is very helpful and has everything all written out for us and I know that will be very beneficial to me!"

"The technology was a challenge. No real surprise. It will get easier. I am not worried. This is because: I am impatient and I don't always know the correct steps to make it work like I want. I would rather have someone show me rather than taking time to figure it out!"

"I had the parents fill out the Behavioral Pediatric Feeding Assessment right away, and I was never able to see it. It would be helpful for me to see these so I can address the parent's concerns more effectively."

Comments on the *MRVI Intervention Tools* and using the *MRVI Intervention in Practice* have been consistently high…

"I read the Gerber case study journal article this week, and have been thinking about the importance of caregiver confidence in feeding. I haven't really thought much about this before, but realize that this is a big reason that my baby has not been fed solid food. Parents have felt very nervous about feeding their baby as they had some difficult experiences early in the feeding process."

"I think it was a success for me to think about doing some sensory activities to help him explore different textures. My little guy doesn't really visually explore things in his lower field--which makes it tricky to look to the high chair tray and want to pick up food. By introducing some sensory things (we tried beans first), it helps me to work on a few things at once--vision goal on his IFSP and improving exploration which will ultimately help with finger feeding for the MRVI Intervention. I think it was a success because mom liked it, my little guy liked it and it changes things up a bit so I'm not always talking about the same thing all the time"

"I had success with the idea sheet for visual adaptation and adding dark shelf liner onto the high chair tray. I was able to help the family make an adaptation that will hopefully help the child to see his little snacks on the tray and eventually feed himself. I've known that we have lots of resources of different strategies, but this was perfect to see how excited Mom was---she put it on right away."

"I am still struggling with helping children transition from smooth puréed foods to adding texture, (crumbled cracker) to favorite foods. We are introducing very small amounts keeping track how much is going into a favorite food. The child is turning away the food with just a small amount of texture. If the mom tried to feed the child the puréed version, the child will not accept that form either. I really not sure why this happens. I would love some guidance."

And throughout the study, comments on Interactions with Families indicated changes in relationships…

"I am learning how important my relationship is with mom and the family. I know it is important for visits, etc. but especially with this study because I am in their home every week. I do not ever see any child every week...this is really helping me to get to know them better and interact more with the whole family. I feel very comfortable and I feel that they are too. I am really seeing that Mom is willing and WILL try what I suggest every time! I think that is due to our relationship!"

"That families are concerned with how/what their child does eat. When I explain the visual implications that the child may experience, families are connecting their child's food reaction could be due to the visual loss"

Conclusions: Information gleaned from the PIJs led to the following: (1) iterative changes in assessment and intervention practices for the MRVI Intervention project, and (2) creation of new online resources to meet the ongoing needs of TSVI-EIs and families participating in the project. PIJs also allowed the project research team to monitor progress and practitioner confidence in implementing the MRVI Intervention with families.

New resources that were created from specific requests in the PIJs included:

- **Dropping or Throwing Items at Mealtime**
- **Using Color Contrast at Mealtime**
- **Adapting Mealtime Environments**
- **Are you All Done? Reading Mealtime Cues**
- **Introducing a Cup to a Child with Visual Impairment**
- **Mealtime Preparation**

"Participation in the study has really changed my practice as a provider in general. I don't know if it's that I am trying to really listen to even non-feeding conversations and finding things that would help during feeding, or if I just feel more holistic in my approach. At any rate, it feels great!"

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Yeong Yu, S., Ostrosky, M. M., Meyer, L. E., Favazza, P. C., Mouzourou, C., & van Luling, L. (2015). Using teacher impression journals to improve intervention effectiveness. *Topics in Early Childhood Special Education.* Advanced online publication. doi: 10.1177/0271121415590810

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Project Narrative - Additional Information

Title : Additional Information
Attachment:

File :
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Project Narrative - Curriculum Vitea

Title : Curriculum Vitea

Attachment:

File :
1 **Ferrell_IES_2018.pdf**
2 **CV_Erskine_MRVI_2018.pdf**
3 **CV_Clark_MRVI_2018.pdf**
4 **CV_Zaghlawan_MRVI_2018_.pdf**
5 **CV_Smyth_MRVI_2018.pdf**
6 **Ferrell_CurrentPending_2018.pdf**
7 **Erskine_CurrentPending_2018.pdf**
8 **Clark_CurrentPending_2018.pdf**
9 **Zaghlawan_CurrentPending_2018.pdf**
10 **Smyth_CurrentPending_2018.pdf**
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BIOGRAPHICAL SKETCH

Kay Alicyn Ferrell

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	YEAR	FIELD OF STUDY
George Washington University, Washington, D.C.	B.A.	1970	Russian Language & Literature
Teachers College, Columbia University, New York, NY	M.A.	1975	Special Education: Blind & Visually Impaired
University of Pittsburgh, Pittsburgh, PA	Ph.D.	1983	Special Education

Positions.

Year(s)	Position	Institution/Organization	Responsibilities
1982-current	Principal Investigator or Research Director	US Department of Education and US Department of Health & Human Services, Various Agencies	32 **federally** funded research and development projects: *International Research and Exchange Board, US Department of State* *Institute for Education Sciences*, NCSER *Office of Elementary & Secondary Education*: Enhanced Assessment Grants *Office of Post-Secondary Education*: Fund for the Improvement of Post-Secondary Education *Office of Special Education and Rehabilitative Services*: Field-initiated research, OSEP Leadership preparation, OSEP Personnel preparation, OSEP Student-initiated research, OSEP Rehabilitation Services Administration National Institution on Disability and Rehabilitation Research *Agency for Healthcare Research and Quality (HHS)*: Rural Health Initiative

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BIOGRAPHICAL SKETCH

Kay Alicyn Ferrell

Year(s)	Position	Institution/Organization	Responsibilities
1982-86	National Consultant in Early Childhood	American Foundation for the Blind, New York, NY	Consultation, training, development of training materials, evaluation of agencies and programs for national advocacy agency
1984-current	Principal Investigator	New York State Office of Education, Colorado Department of Education, and other state and private funding agencies	13 **state and private** research, training, and development funded proposals
1986-92	Assistant to Associate (1990) Professor	Teachers College, Columbia University, New York, NY	Teaching; research; service within the Department of Special Education coordination of Program for Educators of Blind & Visually Impaired Learners; coordination of Early Childhood Special Education Program.
1988-90	Coordinator, New York State Doctoral Evaluation Project	Teachers College, Columbia University, New York, NY	Evaluation of doctoral programs in education and psychology for New York Department of Education
1992-2014	Associate to Full (1994) Professor; Tenured (1994) *Emeritus* (2014)	University of Northern Colorado, Greeley, CO	Teaching, research, service within the School of Special Education; coordination of Severe Needs: Vision and Early Childhood Special Education programs
1998-00	Director, Division of Special Education	University of Northern Colorado, Greeley, CO	Administration of 21-faculty, > 350-student, academic unit
2000-02	Assistant Dean, College of Education	University of Northern Colorado, Greeley, CO	Internal administration, budget, technology
2001-12	Executive Director	National Center on Severe & Sensory Disabilities, University of Northern Colorado, Greeley, CO	Management of center program, budget, program evaluation
2005-14	Trustee (Vice President, 2010-2012)	Colorado School for the Deaf and the Blind, Colorado Springs, CO	Appointed by 3 Colorado Governors to governing board
2006	Technical Advisory Group	Westat	Evaluation of OSEP Personnel Preparation Program

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BIOGRAPHICAL SKETCH

Kay Alicyn Ferrell

Year(s)	Position	Institution/Organization	Responsibilities
2006-08	Project Evaluator	National Science Foundation	Evaluation for grant awarded to WGBH National Center on Accessible Media
2006-08	Associate Director, Policy Research	American Foundation for the Blind, Washington, DC	Research and policy analysis
2006-10	Project Evaluator	Missouri State University	Evaluation of federally-funded personnel preparation program
2011	Executive in Residence	American Printing House for the Blind, Louisville, KY	Development and adaptation of the Boehm-3 *Preschool* and consultation to other products.
2012-current	Regional Chair	International Council on Education of Persons with Visual Impairments	Coordinates activities for the North America-Caribbean region; represent ICEVI at the United Nations
2014-current	Project Evaluator	Illinois State University, Normal, IL	Evaluation of federally-funded personnel preparation grant
2014-current	Project Evaluator	University of Northern Colorado, Greeley, CO	Evaluation of federally-funded personnel preparation grant
2016-19	Research Professor	University of Northern Colorado, Greeley, CO	Principal Investigator for federally-funded research grant

Honors and Awards (since 2013)

2013, Migel Medal, American Foundation for the Blind

2014, M. Lucile Harrison Award, University of Northern Colorado

2014, Warren G. Bledsoe Award, Association for Education & Rehabilitation of the Blind & Visually Impaired

2015, School of Education Departmental Alumni Award from the Department of Instruction & Learning, University of Pittsburgh

2015, Alan J. Koenig Research Award in Literacy, Getting in Touch with Literacy Conference, Albuquerque, NM

2016, Virgil Zickel Award [for the tactile edition of the *Boehm Test of Basic Concepts – Preschool*] from the American Printing House for the Blind (with Ann Boehm), Louisville, KY

3

BIOGRAPHICAL SKETCH

Kay Alicyn Ferrell

Selected peer-reviewed publications (since 2013):

Ferrell, K. A. (2013). Appendix A: Best practices in educating students with low vision. In M. Smith, *Barraga visual efficiency program*. Louisville, KY: American Printing House for the Blind.

Ferrell, K. A. (2014, July). Expectations and realities. *The Educator*, *28*(1), 29-30.

Ferrell, K. A., Smyth, C. A., Henderson, B., & Boehm, A. E. (2014). *Boehm-3 Preschool, Boehm Test of Basic Concepts* (3d ed.) [Tactile Edition]. Louisville, KY: American Printing House for the Blind.

Ferrell, K. A, Bruce, S., & Luckner, J. L. (2014). *Evidence-based practices for students with sensory impairments* (Document No. IC-4). Retrieved from University of Florida, Collaboration for Effective Educator, Development, Accountability, and Reform Center website: http://ceedar.education.ufl.edu/tools/innovation-configurations/

Ferrell, K. A. (2015). Guest editorial. [Special issue on Critical Issues.] *Journal of Visual Impairment & Blindness, 109*, 427-431.

Ferrell, K. A. (2015). Guest editorial. *The Educator, a publication of the International Council for Education of Persons with Disabilities, 28(2), 3.*

Cooney, J. B., Young, J., **Ferrell**, K. A., & Luckner, J. L. (2015). Learning what works in sensory disabilities: Establishing causal inference. *Journal of Visual Impairment & Blindness, 109*, 469-486.

Luckner, J. L., Bruce, S., & **Ferrell**, K. A. (2015). A summary of the communication and literacy evidence-based practices for students who are deaf or hard of hearing, visually impaired, and deafblind*. Communication Disabilities Quarterly*. Prepublished September 9, 2015, DOI: 10.1177/1525740115597507

Bruce, S. M., **Ferrell**, K., & Luckner, J. L. (2016, Fall). Guidelines for the administration of educational programs for students who are deaf/hard of hearing, visually impaired, or deafblind. *Journal of the Academy of Special Education Professionals*, 47-59. Available at http://files.eric.ed.gov/fulltext/EJ1129776.pdf.

Ferrell, K. A., & Smyth C. A. (2017). Growth and development of young children. In M. C. Holbrook, C. Kamei-Hannen, & T. McCarthy (Eds.), *Foundations of Education for Blind & Visually Impaired Children and Youth* (pp. 114-145). New York: AFB Press.

Bruce, S. M., Luckner, J. L., & **Ferrell**, K. A. (2017, June 12). Assessment of students with sensory disabilities: Evidence-based practices. *Assessment for Effective Intervention*. Available at http://journals.sagepub.com/doi/10.1177/1534508417708311. DOI: 10.1177/1534508417708311

Ferrell, K. A., Correa-Torres, S., Howell, J. J., . . . Dewald, A. (2017). Audible image description as an accommodation in statewide assessments for students with visual and print disabilities. *Journal of Visual Impairment & Blindness*, *111*, 325-339.

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Ferrell, K. A., Smyth, C. A., Zierer, C., Zierer, L., & Boehm, A. E. (2017). *Boehm Test of Basic Concepts* (3d ed.) (Tactile adaptation, K-2). Louisville, KY: American Printing House for the Blind.

5

Jamie Erskine, PhD, RD

Position:	Director, School of Human Sciences Professor, Nutrition and Dietetics School of Human Sciences/ College of Natural & Health Sciences University of Northern Colorado Greeley, CO 80639
Telephone	Office: (970)351-1706
E-mail	Jamie.erskine@unco.edu
Education:	2012-2013 Medical Nutrition Fellowship St. Luke's/Roosevelt Hospital Center, New York, NY

1992
 PhD Human Nutrition
Colorado State University, Fort Collins, CO
Dissertation: Tissue specific effects of dietary composition on lipoprotein lipase

1979
Fellowship, Infant and Child Nutrition
University of Washington, Child Development and Mental Retardation Center, Seattle, WA

1979
MS Foods and Nutrition
Oregon State University, Corvallis, OR
Thesis: Growth and intake of children with developmental delays.

1976
BA Home Economics, Dietetics Emphasis
San Diego State University, San Diego, CA

Work Experience:

Professional Academic:

2014 - present
Director, School of Human Sciences
Professor, Nutrition and Dietetics
University of Northern Colorado, Greeley, CO

2009 – 2010
The Children's Hospital, Aurora, CO
Clinical Dietitian (All services, part-time)

1999 - 2006
University of Northern Colorado, Greeley, CO
Associate Professor, Dept. of Community Health & Nutrition/ Dietetics Program

1995 - 1999
University of Northern Colorado, Greeley, CO
Assistant Professor, Dept. of Community Health & Nutrition

1992 – 1995
University of Colorado Health Sciences Center, Denver, CO
The Children's Hospital, Denver, CO
Research Dietitian, Pediatric General Clinical Research Center

Research Areas/ Interests:

Program accreditation; Energy balance, pediatric nutrition including special needs, cystic fibrosis, education of allied health professionals, nutrition screening

Publications:

Juried:
Francis C, Ploucher A, Clark A, Cline A, **Erskine J**. Reliability and validity of a didactic program assessment exam, J of Acad of Nutr and Dietetics (under review)

Erskine J, Lanigan A, Emsermann CB, Manning B, Staton EW, Pace WD. Use of the Americans in Motion-Healthy Intervention (AIM-HI) to create a culture of fitness in family practice, JABFM 25(5):694-700, 2012.

Erksine, J.M., We need to use gastrostomy tubes to improve outcomes in patients with CF, Ped. Pulmonology, 2007, Supp. 30: 117 – 118.

Erskine, J.M., Lingard, C., Sontag, M., Update on enteral nutrition support for cystic fibrosis, Nutrition in Clinical Practice, 2007, 22(2):223-232,.

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Easley, D.J., Krebs, N., Miller, L., **Erskine, J.**, Accurso, F., Hambidge, K.M., Effect of pancreatic enzymes on zinc absorption in cystic fibrosis (abstract), AFCR Regional Meeting, 1995.

Erskine, J.M., Accurso, F.J., Davies, P.S.W., Longitudinal measurement of energy expenditure in infants with cystic fibrosis identified by newborn screen (abstract), Pediatric Pulmonology, 1995, Supp 12: 262,.

Erskine, J.M., Jensen, D.R., Eckel, R.H., Macronutrient regulation of lipoprotein lipase is posttranslational, J. Nutr., 1994, 124:500-507,.

Erskine, J.M., Hill, J.O., Accurso, F.J., Energy expenditure and body composition of infants with cystic fibrosis (abstract),General Clinical Research Center Dietitian's Annual Meeting, Washington, D.C., 1993.

Yost, T.J., **Erskine, J.M.**, Gregg, T.S., Brass, E.P., Eckel, R.H., Dietary substitution of medium-chain triglycerides in subjects with noninsulin-dependent diabetes mellitus in an ambulatory setting: impact on glycemic control and insulin-mediated glucose metabolism, J. Am. Coll. Nutr. 13 (6):615-622,1994.

Sokol, R.J., **Erskine, J.**, Abman, S., Wagener, J., Hammond, K., Accurso, F., Prospective study of fat-soluble vitamin status in 101 infants with cystic fibrosis identified by newborn screening (abstract), Pediatric Pulmonology, Supp. 9:278, 1993.

Thompson, C., **Hughes, J.M.**, Using evaluation strategies within a hospital-based dietetic education program: A case study, J. Am. Diet. Assoc. 89(5):677, 1989.

Professional Presentations:	Juried:

2018   Erskine J, Clark A, The Role of Nutiriton I nMealtime Interventions Up to Two Years of Age, Zero to Three Conference, Denver, CO (submitted)

2017   Clark A, Erskine J, Development of an Assessment Tool to Measure Intake at Weaning, Food & Nutrition Conference and Exposition, Chicago, IL

2015   Bright K, Stoody, T, Gilbert E, Erskine J, et al., Development of an Interprofessional Patient Simulation Academy: Challenges and Opportunities, Association for Standardized Patient Education Annual Conference, Denver, CO.

2015   Francis C, Clark A, Erskine J. Academic Integrity During Online
        Exams for Distance Learning, Food & Nutrition Conference and
        Exposition, Nashville, TN

2012   Francis C, Clark A, Erskine J. Is online learning comparable to
        classroom instruction in dietetics education?
        Food & Nutrition Conference and Exhibition, Philadelphia, PA

Non Juried:
2016   Francis C, Clark A, Erskine E. Academic Integrity and Distance
Learning: What Can Educators
        Do?, UNC Assessment Fair

2014   Translating Literature into Practice: Beyond the Guidelines
        Denver Dietetic Association

2013   Vitamin D in Chronic Kidney Disease: More than a bone
metabolite Northern Colorado Dietetic Association

Funded Projects: 2016-19, An Intervention for Infants and Toddlers with Visual
        Impairment: Independence through the Mealtime Routines
        Model, Grant R324A160139, U.S. Dept. of Educ., National
        Center for Special Education Research, $1.2M

2014- 16 Bright K. et al. Provost Innovation Grant: Interdisciplinary
patient simulation academy, $49,232, UNC I@UNC

2004, Maple Tree: Curriculum for Cancer Treatment; $1500, NIH

**Professional
Service:**   2011-present
Reviewer, Journal of the Academy of Nutrition and Dietetics

2010-present
Reviewer, Journal of Parenteral and Enteral Nutrition

2013-present
Reviewer, Journal of Nutrition Education and Behavior

2015
Evidence Analysis Library, Academy of Nutrition and Dietetics
Future of Profession of Dietetics

2013
Evidence Analysis Library, Academy of Nutrition and Dietetics
Lead Analyst for Fruit Juice Project

2012
Nutrition Fellow, St. Luke's/Roosevelt Hospitals, New York, NY

Alena Clark

University of Northern Colorado
College of Natural and Health Sciences
(970) 351-2879
Email: alena.clark@unco.edu

Education

PhD, Colorado State University, 2006.
Area of Study: Human Nutrition

MPH, University of Minnesota, 1999.
Area of Study: Public Health Nutrition

BA, Concordia College, 1996.
Area of Study: Food/Nutrition and Dietetics

Professional Academic Experience

Program Coordinator, University of Northern Colorado. (2014 - Present).

Associate Professor, University of Northern Colorado. (2013 - Present).

Affiliate Faculty, Colorado State University. (2007 - Present).

Licensures and Certifications

Certified Lactation Counselor, Healthy Children. (2000 - Present).

Registered Dietitian Nutritionist, Commission on Dietetic Registration. (1998 - Present).

RESEARCH, SCHOLARSHIP, AND CREATIVE WORKS

Publications

Juried

Journal Article

Clark, A., Baker, S., McGirr, K., Harris, M. Breastfeeding peer support program increases breastfeeding initiation and duration rates among middle- to high-income women. *Breastfeeding Medicine*.

Clark, A., Lucero-Nguyen, Y. Creating and evaluating a supportive breastfeeding environment on a college campus. *International Breastfeeding Journal*.

Harris, M., Baker, S., Davalos, D., Clark, A., McGirr, K. (in press). Intake of total omega-3 docosahexaenoic acid is associated with increased gestational length and improved cognitive performance at 1 year of age. *Journal of Nutrition Health and Food Engineering*.

Conference (Abstract) Proceeding

Clark, A., Reinsma, K. (2017). *Assessing the self-efficacy and barriers of nutrition counselors in providing nutrition education in Cameroon, Africa* (S1 ed., vol. 49, pp. O51). Journal of Nutrition Education and Behavior.

Professional Presentations

Invited

Non-juried

Clark, A., Northern Colorado Breastfeeding Coalition Meeting, "Chop Fine: Providing Nutrition and Breastfeeding Training to Educators in Cameroon, Africa." (2017).

Not Invited

Juried

Clark, A., Erskine, J., Academy of Nutrition and Dietetics Food and Nutrition Conference and Expo, "Development of an Assessment Tool to Measure Intake at Weaning." (2017).

Non-juried

Clark, A., Reinsma, K., Academy of Nutrition and Dietetics Food and Nutrition Conference and Expo, "Assessing the Self-Efficacy of Nutrition Counselors in Providing Nutrition Education in Cameroon, Africa." (2017).

Clark, A., Society of Nutrition Education and Behavior Meeting, "Assessing the Self-Efficacy and Barriers of Nutrition Counselors in Providing Nutrition Education in Cameroon, Africa." (2017).

GRANTS

Funded

Ferrell, K. (Principal), Erskine, J. (Co-Principal), Smyth, C. (Project Coordinator), Clark, A. (Co-Investigator), Zaghlawan, H. (Co-Investigator), "An Intervention for Infants and Toddlers with Visual Impairment: Independence through the Mealtime Routines Model," Sponsored by United States Department of Education Institute of Education Sciences, Federal, $1,291,048.00. (July 1, 2016 - June 30, 2019).

Clark, A., "Determining Factors Which Affect Breastfeeding Duration Rates," Sponsored by University of Northern Colorado Summer Support Initiative, University of Northern Colorado, $6,612.00. (March 31, 2017 - August 15, 2017).

Clark, A., "Delivering and Evaluating a Nutrition Education Program in Cameroon, Africa," Sponsored by University of Northern Colorado Provost Research Dissemination and Faculty Development, University of Northern Colorado, $6,155.00. (April 8, 2015 - April 8, 2017).

TEACHING

Teaching Experience

University of Northern Colorado

Courses Taught:

FND 252, Nutrition in the Life Cycle, 2 courses. 3.00 credit hours.

FND 335, Breastfeeding: Benefits, Support and Promotion, 3 courses. 2.00 credit hours.

FND 410, Professional Development Seminar, 1 course. 2.00 credit hours.

FND 420, Maternal and Child Nutrition, 3 courses. 3.00 credit hours.

FND 451, Advanced Nutrition, 1 course. 3.00 credit hours.

Directed Student Learning

Doctoral Advisory Committee Member. (2016 - 2017).
Advised: Jamie Daugherty

SERVICE

University Service

NHS Representative, Office of Undergraduate Research Board. (2012 - Present).

College Service

Representative, NHS Undergraduate Council. (2013 - Present).

Program Service

Program Coordinator, Program Coordinator of Nutrition and Dietetics. (2014 - Present).

Advisory Board, Didactic Program in Dietetics. (2007 - Present).

Committee Member, Dietetic Internship Selection Committee. (2007 - Present).

Advisory Board, Dietetic Internship. (2007 - Present).

Committee Chair, Assistant Professor Search Committee. (2017).

School Service

Committee Member, Website Committee. (2008 - Present).

Professional Service

Officer, Treasurer, Academy of Nutrition and Dietetics, Women's Health Dietetics Program Group, Chicago, IL. (2016 - Present).

Committee Member, Academy of Nutrition and Dietetics, Chicago, IL. (2009 - Present).

Abstract Reviewer, Academy of Nutrition and Dietetics, Chicago, IL. (2009 - Present).

Position Paper Content Advisor, Academy of Nutrition and Dietetics, Chicago, IL. (2009 -

Present).

Abstract Reviewer/Breastfeeding Council, American Public Health Association, Washington, DC. (2008 - Present).

Public Health Nutrition Workgroup, Society for Nutrition Education/Journal of Nutrition Education and Behavior, Indianapolis, IN. (2006 - Present).

Reviewer, Journal Article, Society for Nutrition Education/Journal of Nutrition Education and Behavior, Indianapolis, IN. (2006 - Present).

Member, Society of Nutrition Education. (2005 - Present).

Member, American Public Health Association. (2004 - Present).

Work Group Member, Colorado Breastfeeding Coalition/Northern Colorado Breastfeeding Coalition, Denver, CO. (2004 - Present).

Member, Colorado Public Health Association. (2004 - Present).

Member, Northern Colorado Dietetic Association. (2003 - Present).

Member, Colorado Dietetic Association. (2001 - Present).

Reviewer, Grant Proposal, Maternal and Child Health Grant Advisory Board, Minneapolis, MN. (1999 - Present).

Member, Academy of Nutrition and Dietetics (previously American Dietetic Association). (1993 - Present).

Public/Community Service

Committee Member, Dunn Elementary, Fort Collins, CO. (2012 - Present).

Consulting

Professional Consultation, DPD & MS/CP Advisory Board Colorado State University, Fort Collins, CO. (2013 - Present).

Professional Consultation, Lactation Counselor, Fort Collins, CO. (2005 - Present).

DEVELOPMENT ACTIVITIES ATTENDED

Conference Attendance, "Annual Conference," Colorado Dietetic Association. (2013 - Present).

Conference Attendance, "Conference," Colorado Public Health Association. (2013 - Present).

Conference Attendance, "Annual Conference," Colorado Dietetic Associaton. (2012 - Present).

Conference Attendance, "Annual Conference," Colorado Dietetic Association. (2011 - Present).

Conference Attendance, "Annual Conference," Colorado Dietetic Association. (2010 - Present).

Workshop, "Grant Writing Workshop," University of Northern Colorado. (April 2009 - Present).

UNC FACULTY VITA

January 5, 2018

NAME	Hasan Y. Zaghlawan
POSITION	Assistant Professor (tenure-track)
	School of Special Education
	College of Education and Behavioral Sciences
	University of Northern Colorado
TELEPHONE	(970) 351-1648
E-MAIL	hasan.zaghlawan@unco.edu

EDUCATION

INSTITUTION AND LOCATION	DEGREE	YEAR	FIELD OF STUDY
University of Illinois, Urbana-Champaign, IL	Ph.D.	2011	Special Education
University of Jordan, Amman, Jordan	M.A.	2001	Special Education
University of Jordan, Amman, Jordan	B.A.	1998	Special Education

CERTIFICATIONS & TRAINING

2014	Nationally Certified Interviewer/Trainer for the Routines-Based Interview	Siskin Children's Institute Chattanooga, Tennessee
2015	Routine-based Home Visit Training Institute Model	Siskin Children's Institute Chattanooga, Tennessee
2015	Routines-Based Early Intervention & Engagement Classroom Model: Expert and Trainer	The Routines-based Approach by McWilliam (RAM) International Group
2017	Summer Research Training Institute: Single-Case Intervention Research Design and Analysis	Institute of Education Sciences

WORK EXPERIENCE

Year(s)	Position	Institution/Organization	Responsibilities
2013-present	Assistant Professor	University of Northern Colorado, Greeley, CO	Teaching, research, service. Program coordinator of the BA ECSE Program.
2014-2015	Assistant Professor	University of Northern Colorado, Greeley, CO	Acting coordinator of the MA ECSE Program

AREA OF SPECIALIZATION
Early Childhood Special Education (ECSE)

RESEARCH AREA/INTEREST
Promoting early social and communication skills for young children with autism

Zaghlawan   1

Preventing and managing challenging behavior during child and teacher-directed activities
Improving children's engagement in naturalistic environments
Personnel preparation in early childhood special education

PUBLICATIONS (Juried)

Ritchotte, J., & **Zaghlawan, H. Y.**, Davis, J. (revise and resubmit). Coaching parents to use a strengths-based strategy with their young twice-exceptional children *Gifted Child Quarterly.*

Ritchotte, J. A., & **Zaghlawan, H. Y.**, & Lee, C. (2017). Paving the path to engagement for high potential children. *Parenting for High Potential*, 6, 8-13.

Zaghlawan, H. Y., & Ostrosky, M. M. (2015). A parent-implemented intervention to improve imitation skills by young children with autism: A pilot study. *Early Childhood Education Journal*, *44,* 671-680. doi: 10.1007/s10643-015-0753-y

Meadan, H., Ostrosky, M. M., Zaghlawan, H. Y., & Yu, S. (2012). Using coaching with preschool teachers to support the social skills of children with and without Autism Spectrum Disorders. *International Journal of Early Childhood Special Education*, *4*(2), 74-94.

Ostrosky, M. M., Mouzourou, C., Danner, N., & Zaghlawan, H. Y. (2012). Improving teacher practices using microteaching: Planful video recording and constructive feedback. *Young Exceptional Children, 16,* 16-29. doi: 10.1177/1096250612459186

PROFESSIONAL PRESENTATIONS & WORKSHOPS (Juried)

Banerjee, R., **Zaghlawan, H. Y.** (2018). *Supporting Classroom Transitions between Daily Routines: Strategies and Tips*. Presentation at the Rocky Mountain Early Childhood Conference. Denver, CO.

Zaghlawan, H. Y., & Banerjee, R. (2018). *Engaging ALL children in your classroom: Tips and Strategies*. Presentation at the Rocky Mountain Early Childhood Conference. Denver, CO.

Banerjee, R., **Zaghlawan, H. Y.,** Sileo, N. M. (2017). *Implementing Evidence-Based Practices In Home Settings: Recommendations and Strategies.* Presentation at the IASE Biennial Conference. Perth, Australia.

Quesenberry, A., **Zaghlawan, H. Y.**, Benekee, S., Doubet, S., Shaffer, L. (2017). *We are better together: Embedding blending practices in higher education curriculum*. Presentation at the Annual International Conference on Young Children with Special Needs & Their Families. Portland, OR.

Zaghlawan, H. Y., & Ritchotte, J. A. (2017). *Parent-implemented intervention to improve the spoken language complexity for young 2E children*. Presentation at the Annual International Conference on Young Children with Special Needs & Their Families. Portland, OR.

Zaghlawan   2

Banerjee, R., **Zaghlawan, H. Y.**, Davis, J. (2017). *Sara is struggling, what do I do next? Navigating the referral process*. Presentation at the Rocky Mountain Early Childhood Conference. Denver, CO.

Zaghlawan, H. Y., & Banerjee, R. (2017). *Engaging ALL children in your classroom: Tips and Strategies*. Presentation at the Rocky Mountain Early Childhood Conference. Denver, CO.

Ritchotte, J. A., & **Zaghlawan, H. Y.** (2017). *Supportive Reading Practices for Young, 2E Children: A Single-Subject Study*. Presentation at the National Association for Gifted Children 63rd Annual Convention. Charlotte, NC.

FUNDED PROJECTS

Year	Role	Title	Amount	Funding Resource
2016-2017	Principal Investigator	Race to The Top Early Learning Challenge Fund	$125,500	US Department of Education, through Colorado Department of Education
2016-2017	Co-Principal Investigator	A Caregiver-Implemented Intervention to Support the Higher-Level Language Development of High Potential, Young Children with Disabilities. Dr. Jennifer Ritchotte, Co-Principal Investigator	$4,055	University of Northern Colorado, School of Special Education, Bresnahan-Halstead Center
2015- 2017	Principal Investigator	Teaching Teachers to Teach Social Interaction Skills to Young Children With Autism Spectrum Disorder.	$4,872	University of Northern Colorado, Office of Sponsored Programs. Research, Dissemination and Faculty Development
2016-2019	Co-Investigator	An Intervention for Infants and Toddlers with Visual Impairment: Independence Through the Mealtime Routines Model (MRVI), Professor Kay Ferrell, Principal Investigator	$1,156,882	US Department of Education, Institute for Education Sciences, CFDA 84.324A
2014-2019	Project Faculty	Training Rural Early Educators (TREE), Dr. Banerjee, Project Director	$1,169,973	US Dept. of Education, Office of Special Education Programs; 84.325K Focus Area A

Zaghlawan   3

BIOGRAPHICAL SKETCH

Catherine A Smyth

Institution and Location	Degree	Year	Field Of Study
EDUCATION/TRAINING			
Illinois State University, Normal, IL	B.S.	1986	Special Education: Blind and Visually Impaired, *Magna Cum Laude*
Nazareth College Rochester, NY	M.S.	1994	Early Childhood Education
University of Colorado Health Sciences Center Denver, CO		2002	Supporting the Fragile Infant in Daily Care Routines
JFK Partners, University of Colorado, Denver, CO		2005	Transdisciplinary Early Intervention Supports and Services Primary Provider Model Services Training
Vision In Service In America, (VIISA), St. Augustine, FL		2008	Teacher Training In Early Intervention Services for Infants and Toddlers with Visual Impairment
Mealtime Notions, LLC Tucson, AZ		2009	The Get Permission Approach to Sensory Mealtime Challenges
Comprehensive Training Opportunities for Paraeducators for Early Intervention Services (CO-TOP*EIS) University of Colorado, Denver, CO		2010	Developmental Intervention Supervisor Academy (DISA) Developmental Intervention Trainer Academy (DITA)
Keys to Supporting Positive Parent-Child Relationships: Beginning Rhythms and Keys to Caregiving		2014	NCAST training: Early Intervention
Nurse Child Assessment Satellite Training (NCAST) Child/Interaction: Feeding Scale		2016	Assessment/Research Reliability Training
Canvas Instruction Design Boot Camp University of Northern Colorado		2017	Online Course Design Training Using Canvas
University of Northern Colorado Greeley, CO	Ph.D.	2017	Special Education *Graduate Dean's Citation for Excellence*

BIOGRAPHICAL SKETCH

Catherine A Smyth

Positions:

1988-2000	Teacher for Students with Visual Impairments, Birth-21 Early Childhood Specialist	Monroe BOCES I Fairport, NY	Itinerant TVI in Center-based programs, Public and Private School inclusive programs, Home and Hospital Visits. Assessment team member for Vision Department, Early Intervention and Early Childhood Specialist, and Lead for Staff Development Committee
2000-2013	Teacher for Students with Visual Impairments, Birth-6 Early Childhood Home Visit Program Director (2012-2013)	Anchor Center for Blind Children Denver, CO	Supervision of staff Home Visit providers. TVI/Early Childhood teaching in Center-based Preschool, Lead teacher for the Infant and Toddler Parent programs, Early Intervention Home and Hospital visitations, provides all necessary visual and educational assessments for students in program
July 2012 -Present	Research Consultant	SRI International Menlo Park, CA	Research Analyst and Video Coder for IES Grant: *Examining the Reliability and Validity of the Child Outcomes Summary Form* (R324A090171), Professional Development Team
2008-2011	Research Investigator	Anchor Center for Blind Children Denver, CO The Gerber Foundation Fremont, MI	Co-developed and implemented a privately funded three year exploratory case study with an SLP and OT investigating the effect of visual impairment on feeding development
2014-2016	Instructional Design Coordinator	Colorado Department of Human Services, Office of Early Childhood, Race to the Top Team and Quality Child Care Initiatives Denver, CO	Coordinate and create professional development online leaning for Colorado Shines Quality Rating and Improvement System
2016-Present	MRVI Intervention Project Coordinator	University of Northern Colorado Greeley, CO	Research and Intervention Team participation including professional development, individualized coaching, assessment scoring and inter-observer agreement, data collection maintenance, and administrative duties. *An Intervention for Infants and Toddlers with Visual Impairment: Independence through the Mealtime Routines Model.* Institute of Education Sciences, National Center for Special Education Research (R324A160139)

BIOGRAPHICAL SKETCH

Catherine A Smyth

Publications:

Ferrell, K. A., **Smyth, C. A.,** Zierer, C., Zierer, L., & Boehm, A. E. (2017). *Boehm Test of Basic Concepts* (3d ed.) (Tactile adaptation, K-2). Louisville, KY: American Printing House for the Blind.

Ferrell, K. A., Correa-Torres, S. M., Howell, J. J., Pearson, R., Carver, W. M., Groll, A. S., Anthony, T. L., Matthews, D., Gould, B., O'Connell, T., Botsford, K. D., Phangia Dewald, H., **Smyth, C. A**., Dewald, A. J. (2017). Audible image description as an accommodation for statewide assessments for students with visual and print disabilities. *Journal of Visual Impairment and Blindness,* 325-339.

Ferrell, K. A., & **Smyth C. A.** (2017). Growth and development of young children. In M. C. Holbrook, C. Kamei-Hannen, & T. McCarthy (Eds.), *Foundations of Education for Blind & Visually Impaired Children and Youth* (pp. 114-145). New York: AFB Press.

Ferrell, K.A. & **Smyth, C. A.** (2016). *An Intervention for Infants and Toddlers with Visual Impairment: Independence through the Mealtime Routines Model* IES Grant (R324A60139) **(Funded)**

Younggren, N., Barton, L., Jackson, B., Swett, J. & **Smyth, C.** (2016). *Child Outcomes Summary-Team Collaboration (COS-TC) Checklist and Descriptions*. Menlo Park, CA: SRI International.

Younggren, N., Barton, L., Jackson, B., Swett, J. & **Smyth, C.** (2016). *COS-TC Checklist and Descriptions Facilitator's Guide*. Menlo Park, CA: SRI International.

Phangia Dewald, H., & **Smyth, C. A.** (2014). Feasibility of orientation and mobility services for young children with vision impairment using teleintervention. *International Journal of Orientation and Mobility, 6, 83-92.*

Smyth, C., Spicer, C. L., & Morgese, Z. L. (2014). Family voices at mealtime: Experiences with young children with visual impairment. *Topics in Early Childhood Special Education, 34,* 175-185. doi: 10.1177/0271121414536622

Ferrell, K. A., **Smyth, C. A.,** Henderson, B., & Boehm, A. (2014). *Boehm test of basic concepts-3 Preschool* [Tactile ed.]. Louisville, KY: American Printing House for the Blind.

Smyth, C., Botsford, K., & Wilton, A. (2011). We're better together: Research collaborations between home, school and community. *Division of Visual Impairment Quarterly (57)*1, 8-9.

Current and Pending Support

Key Personnel Name	Role in Current Project	Pending or Current	Funding Agency	Title	Term	Percent of Calendar Year
Kay Alicyn Ferrell, Ph.D.	Principal Investigator	Current	Institute for Education Sciences	[this project] An Intervention for Infants and Toddlers with Visual Impairment: Independence through the Mealtime Routines Model	7/1/2016 to 6/30/2019	50%
	Project Evaluator	Current	US Department of Education, Office of Special Education Programs	Project TREE: Training Rural Special Educators	8/1/2014 to 7/31/2019	8% Years 2-4 15% Year 5

Current and Pending Support

Key Personnel Name	Role in Current Project	Pending or Current	Funding Agency	Title	Term	Percent of Calendar Year
Jamie Erskine, Ph.D., MPH	Co-PD/PI	Current	Institute for Education Sciences	[this project] An Intervention for Infants and Toddlers with Visual Impairment: Independence through the Mealtime Routines Model	7/1/2016 to 6/30/2019	25%

Current and Pending Support

Key Personnel Name	Role in Current Project	Pending or Current	Funding Agency	Title	Term	FTE Commitment
Alena Clark, Ph.D., MPH, RD, CLC	Co-Investigator	Current	Institute for Education Sciences	[this project] An Intervention for Infants and Toddlers with Visual Impairment: Independence through the Mealtime Routines Model	7/1/2016 to 6/30/2019	.10 FTE AY .10 FTE Summers

Current and Pending Support

Key Personnel Name	Role in Current Project	Pending or Current	Funding Agency	Title	Term	Percent of Calendar Year
Hasan Zaghlawan, Ph.D.	Co-Investigator	Current	Institute for Education Sciences	[this projectl] An Intervention for Infants and Toddlers with Visual Impairment: Independence through the Mealtime Routines Model	7/1/2016 to 6/30/2019	0.2 FTE
	Project Faculty	Current	US Department of Education, Office of Special Education Programs	Project TREE: Training Rural Special Educators	8/1/2014 to 7/31/2019	0.1 FTE
	Co-Project Director	Pending	Early Milestones Colorado	Fostering Early Childhood Teachers' Success (Project FECTS)	5/1/2018 to 4/30/2019	.05 FTE

Current and Pending Support

Key Personnel Name	Role in Current Project	Pending or Current	Funding Agency	Title	Term	Percent of Calendar Year
Catherine Smyth, M.Ed.	Project Coordinator	Current	Institute for Education Sciences	[this project] An Intervention for Infants and Toddlers with Visual Impairment: Independence through the Mealtime Routines Model	7/1/2016 – 6/30/2019	100%

Project Narrative - Fed/Non Fed Budget Form SF 424

Title : Fed/Non Fed Budget Form SF 424

Attachment:

File :
1 **Ferrell_2018_RR_FedNonFedBudget_1_2_V1.2.pdf**
2 **Note_Re_Budget_Narrative_2018.pdf**
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Please wait...

If this message is not eventually replaced by the proper contents of the document, your PDF viewer may not be able to display this type of document.

You can upgrade to the latest version of Adobe Reader for Windows®, Mac, or Linux® by visiting http://www.adobe.com/go/reader_download.

For more assistance with Adobe Reader visit http://www.adobe.com/go/acrreader.

Note Re Budget Narrative:

The Budget Narrative for Reporting Period 2 is attached to Reporting Period 1 in the R&R Budget Form, because it could not be attached to Reporting Period 2. The budget narrative for Reporting Period 1 was, of course attached to the R&R Budget last year.

I didn't know if I was *supposed* to do both reporting periods, but once I saw that I could not alter the first page (which states "Budget Period 1"), but could ADD another year, that's what I did.

Project Narrative - Grant Performance Coversheet

Title : Grant Performance Coversheet

Attachment:

File :
1 **ed524b_cover_Ferrel2018_signed.pdf**
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U.S. Department of Education
Grant Performance Report Cover Sheet (ED 524B)

OMB No. 1894-0003
Exp. 08/31/2020

Check only one box per Program Office instructions.
[X] Annual Performance Report   [   ] Final Performance Report

General Information

1. PR/Award #: _R324A160139_____   2. Grantee NCES ID#: _127741_____
   (Block 5 of the Grant Award Notification - 11 characters.)   *(See instructions. Up to 12 characters.)*

3 Project Title: __Special Education Research Program_____
   (Enter the same title as on the approved application.)

4. Grantee Name *(Block 1 of the Grant Award Notification.):*___University of Northern Colorado_____

5. Grantee Address *(See instructions.)*

6. Project Director *(See instructions.)* Name:__Kay Ferrell_____Title: __Research Professor_____
   Ph #: (970) _351__ - _1653_____   Ext: (   )   Fax #: (970) _351____ - _1934_____
   Email Address: __kay.ferrell@unco.edu_____

Reporting Period Information *(See instructions.)*

7. Reporting Period: From: _03__/_01__/_2017__   To: _02__/_28__/_2018__   (mm/dd/yyyy)

Budget Expenditures *(To be completed by your Business Office. See instructions. Also see Section B.)*

8. Budget Expenditures

	Federal Grant Funds	Non-Federal Funds *(Match/Cost Share)*
a. Previous Budget Period	$286,452.80	N/A
b. Current Budget Period	$433,252.52	N/A
c. Entire Project Period *(For Final Performance Reports only)*		

Indirect Cost Information *(To be completed by your Business Office. See instructions.)*

9. Indirect Costs
   a. Are you claiming indirect costs under this grant? _x__Yes ___No
   If yes, please indicate which of the following applies to your grant?

   b. _x_ The grantee has an Indirect Cost Rate Agreement approved by the Federal Government:
       The period covered by the Indirect Cost Rate Agreement is from: _07_/ _01__/_2017_ to: _06_/_30__/_2018__   (mm/dd/yyyy)
       The approving Federal agency is: ___ED _x__Other *(Please specify)*: _Health & Human Services_____
       The Indirect Cost Rate is __38.0_%
       The Type of Rate *(For Final Performance Reports Only)* is: __ Provisional __ Final _x_ Other *(Please specify):* Predetermined

   c.___ The grantee is not a State, local government, or Indian tribe, and is using the de minimus rate of 10% of modified total direct
         costs (MTDC) in compliance with 2 CFR 200.414(f).

   d._x_ The grantee is funded under a Restricted Rate Program and is you using a restricted indirect cost rate that either:
       ___ Is included in its approved Indirect Cost Rate Agreement; or
       _x_ Complies with 34 CFR 76.564(c)(2).

   e._x__The grantee is funded under a Training Rate Program and:
       _x_ Is recovering indirect cost using 8 percent of MTDC in compliance with 34 CFR 75.562(c)(2); or
       ___ Is recovering indirect costs using its actual negotiated indirect cost rate reflected in 9(b).

Human Subjects (Annual Institutional Review Board (IRB) Certification) *(See instructions.)*

10. Is the annual certification of Institutional Review Board (IRB) approval attached? ___Yes ___ No _x__ N/A

Performance Measures Status and Certification *(See instructions.)*

ED 524B   Page 1 of 5

11. Performance Measures Status

    a. Are complete data on performance measures for the current budget period included in the Project Status Chart? _x_Yes ___ No

    b. If no, when will the data be available and submitted to the Department? _____/_____/_____ (mm/dd/yyyy)

12. By signing this report, I certify to the best of my knowledge and belief that the report is true, complete, and accurate and the expenditures, disbursements, and cash receipts are for the purposes and objectives set forth in the terms and conditions of the Federal award. I am aware that any false, fictitious, or fraudulent information, or the omission of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (U.S. Code Title 18, Section 1001 and Title 31, Sections 3729-3730 and 3801-33812).

    Furthermore, to the best of my knowledge and belief, all data in this performance report are true, complete, and correct and the report fully discloses all known weaknesses concerning the accuracy, reliability, and completeness of data reported.

_Cira Mathis_____   Title: _Associate Director, Sponsored Programs_____
Name of Authorized Representative:

___Cmathis_____   Date: __03_/_30__/_2018__
Signature:

U.S. Department of Education
Grant Performance Report (ED 524B)
Executive Summary

PR/Award # (11 characters): _____

(See Instructions)

Project Narrative - IRB

Title : IRB
Attachment:

File :
1 **MRVI_Study_5_IRB_Approval.pdf**
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UNIVERSITY OF
NORTHERN COLORADO

Institutional Review Board

DATE: November 7, 2017

TO: Kay Ferrell, PhD
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [1137192-2] MRVI Intervention Project -- Study Five
SUBMISSION TYPE: Amendment/Modification

ACTION: APPROVED
APPROVAL DATE: November 7, 2017
EXPIRATION DATE: November 7, 2018
REVIEW TYPE: Expedited Review

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB has APPROVED your submission. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on applicable federal regulations.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of November 7, 2018.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.

Project Narrative - Indirect Cost Agreement

Title : Indirect Cost Agreement
Attachment:

File :
1   **fy18_fringe_benefit_rate.pdf**
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COLLEGES AND UNIVERSITIES RATE AGREEMENT

EIN:

ORGANIZATION:

University of Northern Colorado
Campus Box 44
Carter Room 1002
Greeley, CO 80639

DATE:05/03/2017

FILING REF.: The preceding
agreement was dated
02/12/2016

The rates approved in this agreement are for use on grants, contracts and other
agreements with the Federal Government, subject to the conditions in Section III.

SECTION I: INDIRECT COST RATES

RATE TYPES: FIXED   FINAL   PROV. (PROVISIONAL)   PRED. (PREDETERMINED)

EFFECTIVE PERIOD

TYPE	FROM	TO	RATE(%)	LOCATION	APPLICABLE TO
PRED.	07/01/2014	06/30/2015	35.00	On-Campus	All Programs
PRED.	07/01/2015	06/30/2016	36.50	On-Campus	All Programs
PRED.	07/01/2016	06/30/2017	37.00	On-Campus	All Programs
PRED.	07/01/2017	06/30/2018	38.00	On-Campus	All Programs
PRED.	07/01/2014	06/30/2018	16.00	Off-Campus	All Programs
PROV.	07/01/2018	06/30/2019	38.00	On-Campus	All Programs
PROV.	07/01/2018	06/30/2019	16.00	Off-Campus	All Programs

*BASE

Modified total direct costs, consisting of all direct salaries and wages,
applicable fringe benefits, materials and supplies, services, travel and up to
the first $25,000 of each subaward (regardless of the period of performance of
the subawards under the award). Modified total direct costs shall exclude
equipment, capital expenditures, charges for patient care, rental costs,
tuition remission, scholarships and fellowships, participant support costs and
the portion of each subaward in excess of $25,000. Other items may only be
excluded when necessary to avoid a serious inequity in the distribution of
indirect costs, and with the approval of the cognizant agency for indirect
costs.

ORGANIZATION: University of Northern Colorado

AGREEMENT DATE: 5/3/2017

SECTION I: FRINGE BENEFIT RATES**

TYPE	FROM	TO	RATE(%)	LOCATION	APPLICABLE TO
PRED.	7/1/2017	6/30/2018	29.80	All	(1)
PRED.	7/1/2017	6/30/2018	16.50	All	(2)
PROV.	7/1/2018	6/30/2019	29.80	All	(1)
PROV.	7/1/2018	6/30/2019	16.50	All	(2)

** DESCRIPTION OF FRINGE BENEFITS RATE BASE:

Salaries and wages including vacation, holiday, sick leave pay and other paid absences.

(1) Salaried employees working half-time or more.
(2) Salaried employees working less than half-time and non-student hourly.

SECTION II: SPECIAL REMARKS

TREATMENT OF FRINGE BENEFITS:

The fringe benefits are charged using the rate(s) listed in the Fringe Benefits Section of this Agreement. The fringe benefits included in the rate(s) are listed below.

TREATMENT OF PAID ABSENCES

Vacation, holiday, sick leave pay and other paid absences are included in salaries and wages and are claimed on grants, contracts and other agreements as part of the normal cost for salaries and wages. Separate claims are not made for the cost of these paid absences. Payment for unused leave at the time when employee separates is included in the fringe benefits pool.

OFF-CAMPUS DEFINITION: For all activities performed in facilities not owned by the institution and to which rent is directly allocated to the project(s) the off-campus rate will apply. Grants or contracts will not be subject to more than one F&A cost rate. If more than 50% of a project is performed off-campus, the off-campus rate will apply to the entire project.

DEFINITION OF EQUIPMENT
Equipment is defined as tangible nonexpendable personal property having a useful life of more than one year and an acquisition costs of $5,000 or more per unit.

The following fringe benefits are included in the fringe benefit rate(s): FICA/MEDICARE, WORKERS COMPENSATION, HEALTH/DENTAL/LIFE INSURANCE, DISABILITY INSURANCE, UNEMPLOYMENT COMPENSATION, TERMINATION LEAVE PAYMENTS, PERA, TUITION GRANTS, AND RETIREMENT PLAN.

This agreement updates fringe benefits only.

NEXT PROPOSAL
An indirect cost rate and fringe benefit proposals based on your fiscal year ending 06/30/17 are due in our office by 12/31/17.

Page 3 of 4

ORGANIZATION: University of Northern Colorado

AGREEMENT DATE: 5/3/2017

SECTION III: GENERAL

A.   LIMITATIONS:

The rates in this Agreement are subject to any statutory or administrative limitations and apply to a given grant, contract or other agreement only to the extent that funds are available. Acceptance of the rates is subject to the following conditions: (1) Only costs incurred by the organization were included in its facilities and administrative cost pools as finally accepted: such costs are legal obligations of the organization and are allowable under the governing cost principles; (2) The same costs that have been treated as facilities and administrative costs are not claimed as direct costs; (3) Similar types of costs have been accorded consistent accounting treatment; and (4) The information provided by the organization which was used to establish the rates is not later found to be materially incomplete or inaccurate by the Federal Government. In such situations the rate(s) would be subject to renegotiation at the discretion of the Federal Government.

B.   ACCOUNTING CHANGES:

This Agreement is based on the accounting system purported by the organization to be in effect during the Agreement period. Changes to the method of accounting for costs which affect the amount of reimbursement resulting from the use of this Agreement require prior approval of the authorized representative of the cognizant agency. Such changes include, but are not limited to, changes in the charging of a particular type of cost from facilities and administrative to direct. Failure to obtain approval may result in cost disallowances.

C.   FIXED RATES:

If a fixed rate is in this Agreement, it is based on an estimate of the costs for the period covered by the rate. When the actual costs for this period are determined, an adjustment will be made to a rate of a future year(s) to compensate for the difference between the costs used to establish the fixed rate and actual costs.

D.   USE BY OTHER FEDERAL AGENCIES:

The rates in this Agreement were approved in accordance with the authority in Title 2 of the Code of Federal Regulations, Part 200 (2 CFR 200), and should be applied to grants, contracts and other agreements covered by 2 CFR 200, subject to any limitations in A above. The organization may provide copies of the Agreement to other Federal Agencies to give them early notification of the Agreement.

E.   OTHER:

If any Federal contract, grant or other agreement is reimbursing facilities and administrative costs by a means other than the approved rate(s) in this Agreement, the organization should (1) credit such costs to the affected programs, and (2) apply the approved rate(s) to the appropriate base to identify the proper amount of facilities and administrative costs allocable to these programs.

BY THE INSTITUTION:

University of Northern Colorado

(INSTITUTION)

_____

(SIGNATURE)

_____

(NAME)

_____

(TITLE)

_____

(DATE)

ON BEHALF OF THE FEDERAL GOVERNMENT:

DEPARTMENT OF HEALTH AND HUMAN SERVICES

(AGENCY)   Arif M. Karim -A
Digitally signed by Arif M. Karim -A
DN: c=US, o=U.S. Government, ou=HHS,
ou=PSC, ou=People, cn=Arif M. Karim -A,
0.9.2342.19200300.100.1.1=2000212895
Date: 2017.05.04 09:57:53 -05'00'

_____

(SIGNATURE)

Arif Karim

_____

(NAME)

Director, Cost Allocation Services

_____

(TITLE)

5/3/2017

_____

(DATE) 1006

HHS REPRESENTATIVE: Jeanette Lu

Telephone: (415) 437-7820

Project Narrative - Publications

Title : Publications

Attachment:

File :
1 **MRVI_Publications_2018.pdf**
2
3
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The MRVI Intervention Project has no publications at this time.

Project Narrative - Research Performance Progress Report

Title : Research Performance Progress Report

Attachment:

File :
1 **R324A160139_PerformanceReport_2018.pdf**
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An Intervention for Infants and Toddlers with Visual Impairment:
Independence Through the Mealtime Routines Model
R324A160139

Performance Report
March 1, 2017-February 28, 2018
(Reporting Period #2)

I.   **ACCOMPLISHMENTS:**

A. **WHAT ARE THE MAJOR GOALS AND OBJECTIVES OF THE PROJECT?**

The primary goal of the Mealtime Routines for Visual Impairment (MRVI) Project is to create a fully developed intervention that will support Teachers of Students with Visual Impairment in Early Intervention (TSVI-EIs) to work with families in supporting infants and toddlers with visual impairment in mealtime independence. At the completion of this project we will provide evidence for the usability, feasibility, fidelity of implementation, and promise of the MRVI Intervention.

B. **WHAT WAS ACCOMPLISHED UNDER THESE GOALS?**

All elements of the Performance Agreement for Project Year One have been completed:

1. Year 1 (July 1, 2016 to June 30, 2017)
Study 1
   a.   Obtain mailing lists for survey participants (July 2016)
   b.   Recruit participants (N = Approximately, 400-500) (July – August 2016)
   c.   Create survey (July – August 2016)
   d.   Conduct survey (September – October 2016)
   e.   Analyze survey results (October – November 2016)
Studies 2 - 4
   f.   Recruit teacher and family participants (September – October 2016) (*N* = 12 provider/family pairs)
   g.   Random assignment of teachers to coaching/no coaching conditions (November 2016)
   h.   Train TSVI-EIs (January 2017)
   i.   Implement the 3 studies (January – June 2017)
   j.   Continuous data collection, analysis, and review (February - June 2017)

For Project Year 2, Performance Agreement #2a-2f have been completed:

2. Year 2 (July 1, 2017 to June 30, 2018)

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Studies 2 - 4
    a. Implement studies, continued (July – December 2017)
    b. Continuous data collection, analysis, and review (July – December 2017)
Study 5 (Pilot Test)
    c. Prepare MRVI Intervention for pilot study based on results of previous studies (November – December 2017)
    d. Recruit TSVI-EI providers and family participants (*N* = 14 pairs) (November 2017)
    e. Train providers in intervention (January 2018)

At the time this performance report is submitted, item 2f is in progress:

    f. Implement the intervention with providers and families (January – June 2018)

Results from Studies Three and Four (January-June, 2017)

Studies Three and Four were designed to iteratively develop the MRVI Intervention. Following face-to-face training in Denver, 12 TSVI-EI (Teacher of Students with Visual Impairment in Early Intervention) participants were randomly assigned to one of two groups, one that received weekly distance coaching from members of the Intervention Team (n = 6) and one that did not (n = 6). TSVI-EIs in the coaching group were also randomly assigned to one of three members of the Intervention Team who checked in weekly with the TSVI-EIs through email and telephone conversations to answer questions, problem-solve issues, and encourage next steps. All TSVI-EI participants videotaped a typical mealtime with Caregiver and Child each month and submitted it to project staff using OneDrive, a Microsoft cloud-based product that is HIPAA and FERPA compliant. Project staff were randomly assigned to observe the videos and score the assessment and fidelity measures detailed below. Staff were trained to .80 inter-observer agreement on all assessments and to .90 inter-observer agreement on the NCAST. Inter-observer agreement throughout Studies Three and Four were calculated on 16.7% of all videos (results are shown in **Attachment #1** in **Additional Information**).

The Research Team met monthly from January to December, 2017, to review assessment data and revise the MRVI Intervention. At the six-month point, data from the two studies were examined to determine whether coaching was a necessary element of the MRVI Intervention. At that point, the Team determined that the data did not demonstrate an advantage for the Coached group over the Non-Coached group of TSVI-EIs. The *MRVI Statistical Report January-June, 2017* (see **Attachment #2** in **Additional Information**) provides details supporting the following conclusions:

Study 3--**Coaching Practices Rating Scale** (Rush & Shelden, 2006). The non-coaching group produced higher scores than the coaching group. TSVI-EIs in the non-coaching group used more evidence-based coaching practices than practitioners in the coaching group.

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Study 3--**Family Centered Practices Checklist** (Wilson & Dunst, 2005). The non-coaching group of TSVI-EIs used more help-giving family choice and action practices than the coaching group. Help-giving practices associated with interpersonal skills, asset-based attitudes, and practitioner responsiveness were not significantly different between coaching and non-coaching groups.

Study 4--Parent Confidence and Efficacy Scale (Dunst & Rabb, 2002). Coached and Non-Coached TSVI-EI groups did not differ significantly in caregiver effort, strategizing, emotional regulation, or pride/gratification.

Study 4--Mealtime Communication Measure (Morgese, 2016). Communication between caregiver and child did not differ significantly for Coached and Non-Coached groups during mealtime and ending the mealtime. There was better communication between caregiver and child during preparation for mealtime in the Non-Coached group than in the Coached group.

Study 4--NCAST Feeding Scale (NCAST Programs, 2015). There was no difference in sensitivity to cues, response to child's distress, social-emotional growth fostering, cognitive growth fostering, clarity of cues, or responsiveness to caregiver between Coached and Non-Coached groups.

Needless to say, based on the literature we had hypothesized that coaching would be a necessary element of the MRVI Intervention, but that did not prove to be the case.

Fidelity. The MRVI Intervention consists of the following elements: (a) training (currently face-to-face, but eventually available through online videos); (b) specific instructional practices; (c) family centered early intervention practices; (d) TSVI-EI coaching during home visits; (e) internet-based resources that help to problem-solve various issues associated with nutrition and independent eating; and (f) Idea Sheets addressing behavior, communication, initiation, and visual adaptations. When examining the fidelity with which the MRVI Intervention was implemented (see **Attachment #2** in **Additional Information**), we found that:

- Instructional practices observed:
    - Caregivers paired with *Coached* TSVI-EIs did not demonstrate significantly more MRVI instructional practices.
    - The number of MRVI instructional practices observed was approximately the same in both Coached and Non-Coached groups. There was no statistical difference between Coached and Non-Coached groups in the number of MRVI instructional practices observed.
- Online Resources:
    - TSVI-EIs in both Coached and Non-Coached groups overall demonstrated very little sharing of MRVI Intervention resources with Caregivers, although there was significantly more sharing of MRVI online resources in the *Coached* group than in the Non-Coached group.

- Opportunities to use the MRVI Intervention:
  - TSVI-EIs in the *Non-Coached* group missed more opportunities for using the MRVI Intervention, but the difference was not statistically significant.
- TSVI-EI—Caregiver Discussions:
  - There were more TSVI-EI and Caregiver discussions within the *Coached* group.
- Caregiver-Child Interactions:
  - The number of mealtime caregiver/child interactions and negative mealtime routine experiences were about the same, regardless of the TSVI-EI's group status.
  - Caregivers paired with *Coached* TSVI-EIs demonstrated fewer negative mealtime interactions, but did not demonstrate a greater number of positive mealtime interactions.

Our results examining how well the MRVI Intervention was implemented were mixed, but when combined with results from the other assessments used in Studies Three and Four, coaching did not provide an advantage to delivery of the MRVI Intervention. It appears that the MRVI Intervention, does not require individual coaching of TSVI-EIs for successful implementation. We therefore eliminated coaching from the MRVI Intervention after six months, and individual coaching contacts with TSVI-EI participants no longer occurred. We continued to collect data through observation of monthly videos, and used those observations to revise the MRVI Intervention until December 31, 2017.

Conclusions from Studies Three and Four (January-December, 2017)

The statistical report for the 12-month term of the studies is found as **Attachment #3** in **Additional Information**. The research questions examined were:

1. Are there differences between Coached and Non-Coached groups in the challenges and successes encountered during the implementation of the MRVI Intervention?

2. Are there differences between Coached and Non-Coached groups in the consistency with which TSVI-EI Participants used family centered coaching practices to establish fidelity during the MRVI Intervention?

3. Are there differences between Coached and Non-Coached groups in the fidelity with which TSVI-EIs used the MRVI Intervention practices and online resource tools?

Results at the conclusion of the two studies were similar to the results found at the six-month point.

- Scores on most assessments were not significantly different between Coached and Non-Coached TSVI-EIs and Caregivers on the Coaching Practices Rating Scale (Rush &

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Shelden, 2006), the Mealtime Communication Measure (Morgese, 2016), or the fidelity with which the MRVI Intervention was implemented, although TSVI-EI-Caregiver dyads in the Non-Coached group tended to miss more opportunities to intervene. The means for number of MRVI Intervention practices observed, positive caregiver/child interactions, and negative mealtime experiences were not statistically significant between Coached and Non-Coached groups.

- On the Family Centered Practices Checklist (Wilson & Dunst, 2005), the Non-Coached TSVI-EIs and Caregivers performed better on items related to family choice and action practices and responsiveness. The mean rating for "Preparing for the Meal" on the Mealtime Communication Measure was significantly greater for the Non-Coached group as well.
- Mean scores for caregiver effort, strategizing, and emotional regulation on the Parent Confidence and Efficacy Scale (Dunst & Rabb, 2002) did not differ significantly for Coached and Non-Coached Groups
- Mean scores for sensitivity to cues, response to child's distress, social-emotional growth fostering, cognitive growth fostering, clarity of cutes, and child responsiveness to caregiver on the NCAST Feeding Scale were not statistically significant between Coached and Non-Coached TSVI-EI—Caregiver dyads.

It is interesting to note that the patterns between Coached and Non-Coached groups persisted when the coaching was discontinued. Most TSVI-EIs in the Coached group expressed disappointment that the coaching was discontinued, which might be attributed to the isolation often expressed by TSVIs whose work is spread across large geographic areas and whose interaction with colleagues is limited due to the itinerant nature of their employment. The limitation of these two studies was, of course, the small group size.

We were conscious as well of the demands of conducting research with families in their homes. We lost data due to child illness, family vacations, and what we have labeled "early intervention fatigue." Our TSVI-EI participants were rarely the only early intervention or related service provider visiting in the home, and often the children had multiple appointments outside of the home. While nothing in our data analysis suggests that the MRVI Intervention cannot be delivered in the natural environment of the home, collecting data at consistent intervals is a challenge. During the course of Studies Three and Four, we lost three families – one withdrew because of child illness; another moved; and the third withdraw from early intervention services entirely. We were able to recruit another family, but our original 12 TSVI-EI—Caregiver dyads was reduced to 10.

Anthropometric and Nutritional Data, Study Four

Growth and dietary intake data were collected for several reasons with a primary purpose to ensure safety of the mealtime intervention. With the premise that mealtime routines provide valuable opportunities for behavior change and communication, they are also essential for adequate nutritional intake to support growth and development. Thus, data typically used to track growth of infants and toddlers were collected via the TSVI-EIs from

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parents or Caregivers. Length, weight, and head circumference measurements were collected from physician or clinic offices and reported by the Caregivers. The data were plotted on WHO growth charts (National Center for Health Statistics, 2009) to determine tracking of head circumference-for-age, weight-for-age, length-for-age, and weight-for-length. These measures are the best outcome measures available for the general public to monitor nutritional status.

In addition to ensuring safety, growth data were collected and analyzed to answer the Study 4 question,

> *"Do infants and toddlers with visual impairment demonstrate developmentally appropriate change in growth and age-expected fine motor and mealtime skills after participating in the Coached or Non-Coached MRVI Intervention?"*

Unfortunately, it was difficult to obtain monthly growth data as children did not visit their care providers with that degree of frequency. Dr. Pickler (Medical Consultant), Dr. Clark (Co-Investigator), and Dr. Erskine (Co-Principal Investigator) evaluated the growth data. For two children, there was inadequate data to determine the rate of growth. All other children appeared to track appropriately in growth channels for age with the exception of one child who demonstrated slow length gain with adequate weight gain. This is not a pattern typically associated with short-term nutritional status. We did not see evidence of the intervention negatively affecting growth from the data available.

The **Baby Early Eating Tool of Intake and Texture (BEET IT)** (Clark & Erskine, 2016) was used to collect food and beverage intake of the children via the TSVI-EIs interviewing the Caregivers on a monthly basis regarding 3 days of dietary intake. This information was used to answer the Study 4 question,

> *"Do infants and toddlers with visual impairment demonstrate change in health food choices and mealtime behaviors after participating in the Coached or Non-Coached MRVI Intervention?"*

Qualitative data were collected and analyzed for patterns of intake relative to chronologic age with a focus on variety of foods consumed, variety of textures consumed, healthy food choices consumed, self-feeding, and exposure to food items even if not consumed. These factors were selected based on previous reports of food selectivity in children with visual impairment (Smyth, Spicer, & Morgese, 2014) and that several exposures to food items are often required for children to accept them (Carruth, Gordon, Ziegler, & Barr, 2004). Overall, qualitative observations of dietary intake indicate that most of the children progressed as expected for age with regard to finger feeding, acceptance of textures, and consuming a variety of types of foods with a few exceptions. Two children were slow to progress from purees during the first year. There did not appear to be differences between children in the Coached and Non-Coached groups, however data were lacking for several months with a mean of 6.2 data points and range of 2-11 months of data per child.

In order to more objectively determine progress with age and differences in consumption of healthy food choices between children in Coached and Non-Coached groups, a scoring tool was developed to accompany BEET IT dietary intake reporting. This is an original scoring tool developed by Dr. Jamie Erskine (Co-PI) and Dr. Alena Clark (Co-Investigator), as there are no existing guidelines for dietary intake for children less than two years of age (Raiten, Raghaven, Porter, Obbagy, & Spahn, 2014). It was derived in part from the U.S. Dietary Guidelines for Americans (U. S. Department of Health and Human Services and U. S. Department of Agriculture, 2015) with adjustments for portion sizes and nutritional needs for this young population. The scoring system is divided into three areas: texture, healthy food choices, and variety of foods. Scores are determined based on age-appropriate criteria for each of the three categories. A literature search was conducted seeking evidence for typical and recommended dietary intakes for this age group and a scoring system was developed. Once drafted, a focus group consisting of 5 practicing pediatric registered dietitians and facilitated by Dr. Catherine Smyth (Project Coordinator) was conducted to obtain input regarding appropriateness of identified age groups, number of servings from each identified food group, scoring that would define healthy for age groupings from 6 months to 24 month, and the number of types of food items that defines adequate variety per age. The scoring system was then tested for inter-rater reliability using two BEET IT reports of children of different ages from Study 4. The inter-rater reliability was 100% between Drs. Clark and Erskine.

The revised and tested scoring system was used to score each monthly BEET IT report from Study 4 and the data were analyzed. Scores by age were tabulated on a spreadsheet for each child for each of the three outcomes (food texture acceptance, healthy food choices, and acceptance of a variety of foods) (see **Attachment #4** in **Additional Information**). It is difficult to identify trends due to missing data, however it does not appear that there is a difference between the children's intakes for any category in Coached vs. Non-Coached groups, and there is no evidence that the intervention inhibited the progression of food and beverage intake.

Limitations in the scoring system were identified that led to inappropriately low total scores for the healthy food choices and variety categories. With consultation from Dr. Laura Pickler (Medical Consultant), revisions to the scoring tool were made prior to use in Study Five.

Iterative Revision of the MRVI Intervention

The conduct of Studies Three and Four led to several important revisions to the MRVI Intervention:

1. One-to-one coaching was eliminated.
2. Additional materials were added to the online bank of caregiver resources for mealtime routines, utensil use, nutritional food choices, and presentation adaptations specific to infants with visual impairment.
3. The training was revised to provide more emphasis on use of the technology and more practice in observing and identifying opportunities for intervention during mealtime routines.

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4. Fidelity measures for the MRVI Intervention were redesigned to more precisely capture specific behaviors expected of TSVI-EIs, Caregivers, and Children, when the MRVI Intervention is being implemented as designed. These measures are found in **ATTACHMENTs #5 and #6** in **Additional Information**.

Supplemental analysis of the Coaching Practices Rating Scale. A secondary analysis of data from the CPRS was conducted to drill down into the low scores for TSVI-EIs on this measure of best practice in early intervention. The number of times an item on the CPRS was scored as present was divided by the number of videos submitted, yielding a proportion of opportunities when the behavior was observed. TSVI-EIs as a group were observed to "interact[ed] with the learner in a nonjudgmental and constructive manner during coaching conversations" 85.7% of the available opportunities, and "asked probing questions to examine the learner's knowledge and abilities" for 58.2% of the available opportunities. About one-third of the time (35.2%), TSVI-EIs "acknowledged the learner's existing knowledge and abilities as the foundation for improving knowledge and skills." All other behaviors were observed less than one-fourth of the available opportunities (see **Attachment #7** in **Additional Information**. These data led to a discussion of the content of personnel preparation programs for teachers of students with visual impairments, and the apparent lack of knowledge and training in early intervention best practice. While this may lead to an article about preparing TSVIs to work in early intervention, it also led to increased attention in the training to the nature of early intervention practice. The MRVI Intervention was similarly tweaked to incorporate some of this information.

Analysis of the Measure of Engagement, Independence, and Social Relationships (MEISR) (McWilliam & Younggren, 2012). Project staff grew increasingly frustrated with the MEISR over the course of Study Four, as the items often used terms like "tries to" or combined actions into one item that made it difficult to score if both behaviors were not observed. In addition, because the MEISR was constructed with gaps between ages or the age distribution was unequal (several items for 12-15 months, then another several for 18 months), an age could not be assigned reliably to any child participant. Instead, we estimated an age of performance at project entry, at the end of June, and then again in December. The majority of children demonstrated progress as measured by the MEISR, although "progress" was relative and differed in degree for each child. There appeared to be no difference in Coached vs. Non-Coached groups (see **Attachment #8** in **Additional Documents**. This, too, led to changes in the training and the development of the MRVI Eating Behaviors Checklist (discussed below), which will be shared with TSVI-EI participants as part of the MRVI Intervention.

Analysis of the Erhardt Developmental Prehension Assessment (EDPA) (Erhardt, 1994). The nature of the EDPA made it difficult to include within the statistical analysis, so a supplemental analysis was conducted (see **Attachment #9** in **Additional Documents**). The results indicated that all children made progress as measured by the EDPA, although the degree of progress was not uniform across participants. Only one child was close to developmental age on the EDPA (#10). All other children were demonstrating developmental hand skills below their chronological age.

Study Five (Pilot Test)

Research questions for Study Five are:

- Does the application of the **MRVI Intervention** result in increased caregiver/family confidence and positive mealtime interactions?
- Does the application of the **MRVI Intervention** result in child outcomes of age-appropriate food selectivity, age-appropriate mealtime development skills, increased participation in family mealtime routines, increased use of family identified mealtime skills, and improved or age appropriate behavioral responsiveness to caregiver/family members at mealtimes**?**

Institutional Review Board approval for Study Five was received in November, 2017, at which time active recruitment of TSVI-EIs began. Recruitment was considerably more difficult this time – due, we believe, to the requirement of a business-as-usual group, which the field of visual impairment rarely uses. TSVI-EIs were randomly assigned to the Experimental or Business-as-Usual Group as their consent forms were received, and the seven TSVI-EIs in the Experimental Group were trained in the MRVI Intervention January 21-26, 2018 in Denver, CO. Data collection for both Experimental and Business-as-Usual (n = 7) Groups began in early February with baseline data.

A video protocol was created by the Experimental TSVI-EIs and the Project Research Team during the January 2018 training (**Attachments #10** in **Additional Information**) and subsequently shared with the Business-as-Usual TSVI-EIs (**Attachment#11** in **Additional Information**). All TSVI-EIs submit a monthly video of a typical mealtime. The videos are then scored by the Research Team using the following assessments:

- **MRVI Eating Behaviors Checklist.** This is a criterion-referenced instrument created by the Research Team to replace the MEISR (Measurement of Engagement, Independence, and Social Relationships). The Research Team was unsatisfied with the MEISR because it did not identify precise behaviors and establishing an age level was problematic. Since a valid assessment for infants and toddlers with visual impairment does not exist, the Research Team developed the MRVI Eating Behaviors Checklist by taking mealtime behaviors from standardized early childhood assessments and tweaking the wording for precision. Age levels are identified by the original standardization; where age levels are available for infants and toddlers with visual impairments, they are included.
- **Erhardt Developmental Prehension Assessment (EDPA)** (Erhardt, 1994)**.** The EDPA is the only norm-referenced assessment tool that measures fine motor development in children from birth to 15 months. Erhardt developed the content under the assumption that the quality and level of hand movements are acquired as a part of the developmental process (Erhardt, 2010) and can be measured as individualized skills. Children will be observed in videos during mealtime routines by the Occupational

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Therapy (OT) Consultant and the Graduate Research Assistant, who have been trained to use the EDPA.

- **MRVI Mealtime Communication Measure (MRVI-MCM)** (Morgese, 2016)**.** Positive mealtime interactions between caregiver and child are key to developing developmental eating skills (Burklow, McGrath, & Kaul, 2002; Crist & Napier-Phillips, 2001; Feldman, Keren, Gross-Rozval, & Tyano, 2004). The development of receptive and expressive communication skills in infants and young children is highly affected by the language stimulation they receive from their parents and/or primary caregivers. Developing mealtime routines requires consistent parent-infant communication in the preparation of the meal, during the mealtime itself, and as the mealtime ends. This measure was created by MRVI Intervention Project Staff to use during video observations to understand what mealtime narration and cues look like between parent and child. Increases in positive language, narration, and routine cues will indicate a change in caregiver understanding regarding knowledge shared through the MRVI Intervention.

- **NCAST Parent-Child Interaction Feeding Scale** (NCAST Programs, 2015)**.** Positive parent-child interactions are at the heart of beginning social-emotional development and mealtime experiences. The six subscales of the NCAST Parent-Child Interaction Feeding Scale include: (a) parent sensitivity to infant cues, (b) responsiveness to distress, (c) social-emotional growth fostering activities, (d) cognitive growth fostering activities, (e) infant clarity of cues, and (f) responsiveness to parent (Oxford & Findlay, 2015). The last two subscales make these rating scales particularly appropriate for "learning what difficulties the parent is experiencing with a child who has problems with communication due to altered sensory processing" (Kelly & Barnard, 2003, p. 277). Five MRVI Intervention project staff have been trained to reliability on this assessment.

- **Parent/Caregiver Evaluation of Services.** The MRVI Intervention is facilitated by TSVI-EI professionals and easily incorporated into daily routines of the family, so it is important to collect feedback that indicates parent/family satisfaction with the services received. A survey with both Likert ranks and open-ended questions that address the use of the MRVI Intervention strategies, resources, and video sessions was developed in Study Four. A modified version of this survey that excludes references to the MRVI Intervention will be administered to the Business-as-Usual Group of parents/caregivers. Both versions will be available online through Qualtrics™ (2017).

- **Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO)** (Roggman, Cook, Innocenti, Norman, & Christiansen, 2013)**.** One of the primary outcomes of the Gerber Foundation study (Smyth et al., 2014) was the role of parenting confidence; it was significantly lower with the tactual learning group, but subsequently improved with supportive intervention. The PICCOLO was developed to measure 29 developmentally supportive parent behaviors in the 4 critical domains of affection, responsiveness, encouragement, and teaching. This psychometrically strong measurement that was reliably scored using video observations (Innocenti, Roggman, & Cook, 2013) will address interactions for both Intervention and Business-as-Usual Groups in the natural environment of the home. This measurement will document change in caregiver/family confidence as well as the child's improved or age-expected behavioral responsiveness to caregiver/family members at mealtimes.

Two other assessments are completed online by Caregivers:

- **BEET-IT (Baby Early Eating Tool of Intake and Texture)** (Clark & Erskine, 2016)**.** This measure has been developed in an iterative process (described above) during Study Four to assess the variety of foods and textures that child participants eat or refuse. Age appropriate mealtime behaviors include increases in food intake, texture, and variety acquired over time. The tool is available as a link on a Smartphone or computer so the caregiver can enter the data independently every month.
- **Behavioral Pediatric Feeding Assessment (BPFA)** (Crist, 1994)**.** The BPFA is a caregiver report measure that has normative value for both children without feeding concerns and those in clinical settings who receive therapeutic feeding sessions. The measure has 35 items, addressing both child behaviors and parental feelings about mealtime. This measure documents the caregiver's reported confidence levels as well as the family's awareness of concerns present during mealtimes. The tool is also available as a link so the caregiver can enter the data independently every month.

As this report is submitted, we have already lost participants. The Experimental Group began with seven TSVI-EI—Caregiver dyads, but has lost two because families decided to withdraw. One TSVI-EI has secured the participation of another family, and the second TSVI-EI is currently looking. All seven TSVI-EI—Caregiver dyads in the Business-as-Usual Group are identified and submitting data. This, too, speaks to the exigencies of conducting research in early intervention.

C. WHAT OPPORTUNITIES FOR TRAINING AND PROFESSIONAL DEVELOPMENT HAS THE PROJECT PROVIDED?

TRAINING ACTIVITIES FOR PROJECT STAFF:

No new training or professional development has been provided to the Project Staff.

PROFESSIONAL DEVELOPMENT OPPORTUNITIES FOR RESEARCH PARTICIPANTS:

As part of Study Five (the Pilot Study), seven TSVI-EI practitioners randomly assigned to the Experimental Group travelled to Denver, Colorado, to engage in a week-long professional development experience designed with the Tell-Show-Try-Apply model (Browder et al., 2012). Although a snow storm almost closed the Denver International Airport, all participants arrived safely and on-time. The goal of the training was to enhance the TSVI-EI practitioner's understanding of the development of mealtime skills in young children with visual impairment, ensure their mastery of the elements of the MRVI Intervention**,** and assess their use of family-centered practices and coaching skills during a simulated EI session.

Members of the MRVI Intervention Research Team provided face-to-face training in the areas of typical motor, communication, tactile, and mealtime development skills for infants and

toddlers; the importance of social-emotional development at mealtimes; routine-based home visits and family-centered practices; and the importance of nutrition for infants and toddlers. Participants were encouraged to review and read all of the MRVI Intervention resources in a Canvas course module that was designed specifically for this training.

The training session also included (a) familiarizing TSVI-EIs with all of the technology to share intervention resources, (b) uploading videos, (c) accessing the Canvas course, and (d) assisting parents with completing the BEET-IT and the BPFA. Participants had opportunities to practice reviewing and using the technology expectations, and were quizzed nightly to make certain they attained mastery of the tools. The participants received additional instruction and were allowed to complete the quiz again as many times as necessary until mastery was met at 85%. No one needed to take the quiz more than one additional time. Iterative changes were made to the Study Two training the next day when TSVI-EI practitioner feedback from daily "impression journals" (Yeong et al., 2015) indicated that there was any confusion about instructional content or the use of technology.

D. HAVE THE RESULTS BEEN DISSEMINATED TO COMMUNITIES OF INTEREST?

Information about the project has been disseminated to early childhood special educators, nutrition and dietetics professionals, and the field of visual impairment primarily through informational sessions at conferences. These are detailed in Section II, PRODUCTS, below.

E. WHAT DO YOU PLAN TO DO DURING THE NEXT REPORTING PERIOD TO ACCOMPLISH PROJECT GOALS?

We plan to continue to follow the project timeline, tasks, and activities as specified in our Performance Agreement.

II. PRODUCTS

A. PRESENTATIONS

The following presentations were submitted and/or presented during the Second Reporting period:

Invited: Catherine Smyth (Project Coordinator) and Carol Spicer (Occupational (OT) Consultant) were invited to speak at the biennial Western Regional Early Intervention Conference in Phoenix, AZ, in June, 2017. The title of their presentation was *Mealtime Routines for Infants and Toddlers with Visual Impairment.* They presented general information on the Gerber project, discussed the results of Studies One and Two, and outlined the goals for the

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entire MRVI Project. The session included approximately 50 participants. An evaluation of the session is included as **Attachment #12** in **Additional Documents**; because other dissemination has been with posters, this workshop evaluation is the only feedback we have at this time.

Accepted: Clark, A., Erskine, J. Development of an assessment tool to measure intake at weaning. Poster presentation at the Food and Nutrition Conference and Exhibition (FNCE), Annual Meeting of the Academy of Nutrition and Dietetics, Chicago, IL, October 2017. [See **Attachment 13** in **Additional Information**.]

Accepted: Ferrell, K. A., Erskine, J., & Smyth, C. A. An intervention for infants and toddlers: Independence through the Mealtime Routines Model. Conference on Research Innovations in Early Intervention, San Diego, CA., March 1, 2018. [See **Attachment #14** in **Additional Information**.]

Accepted: Dewald, H. P., & Smyth, C. A. Supporting family mealtime routines through the practitioner's voice: Journal entries and implementation. Conference on Research Innovations in Early Intervention, San Diego, CA, March 2, 2018. [See **Attachment #15** in **Additional Information**.]

Accepted: Ferrell, K. A. Two year results from the MRVI Intervention Project. Association for Education and Rehabilitation of the Blind & Visually Impaired, Reno, NV, July 25-29, 2018.

Accepted: Croft, J-E., Ferrell, K. A., Holbrook, M. C., & Senft-Graves, C. Walking the tightrope: Teaching braille reading while maintaining early childhood best practice. Association for Education and Rehabilitation of the Blind & Visually Impaired, Reno, NV, July 25-29, 2018. [See discussion above about TSVIs and early intervention best practice; this presentation is a debate juxtaposing early intervention best practice with methods of teaching school-age children with visual impairment.]

Submitted: Puchalski, C. Supporting Positive Social and Emotional Development for Fragile Babies and their Families. Special Kids Special Care Interdisciplinary Institute, Denver, CO, September 2018.

Submitted: Erskine, J., & Clark, A. BEET-IT. Zero to Three Conference, Denver, CO., October 3-5, 2018.

Submitted: Smyth, C. A. An intervention for infants and toddlers: Independence through the Mealtime Routines Model. Zero to Three Conference, Denver, CO., October 3-5, 2018.

Submitted: Puchalski, C. Social/emotional development. Zero to Three Conference, Denver, CO., October 3-5, 2018.

The Institute of Education Sciences is acknowledged for each presentation in PowerPoints, posters, and handouts, along with the standard disclaimer.

B. WEB OR INTERNET SITES

A web site was developed for public access. The URL is http://MRVI-UNC.org. The purpose, research questions, and outcomes of the project will be posted to the website as they become available. Eventually, if the MRVI Intervention proves promising, this website will include information about the intervention itself, with resources. The website will include the presentations that form the training.

C. TECHNOLOGIES OR TECHNIQUES

This project utilizes several software applications (underlined below) for communication, data collection, scoring and storing data, and to provide training and coaching. OneDrive for Business, a file sharing application, is used primarily for communication among the research team and for holding videos and documents such as IRB proposals and approvals, participant consents, meeting minutes, datasheets, reports, and administrative records. Access is secured and managed by the project coordinator and the primary investigators. It is compliant with FERPA and HIPAA regulations.

Some data are collected via videos that are recorded by the TSVI-EIs usually in the home environment. Each TSVI-EI has an electronic tablet (provided with project funds) that is used to record the videos. The videos are uploaded to an individual folder on OneDrive for each TSVI-EI where assigned members of the research team may access them. The videos are de-identified each month in a OneDrive folder accessible only to members of the research team.

Once videos are scored/analyzed, they are archived to an external drive dedicated to this project and stored under lock and key in the Project Office.

The Tablet Based Data Collection Tool (TBDCT) was created by Aaron Dewald, Technology Consultant for the MRVI Intervention Project. The TBDCT is used (a) to enter data requested of the Caregiver; and (b) to upload data as it is scored by the research team. All data on the TBDCT are secured on Mr. Dewald's server, and he is the sole manager.

Canvas, a learning management system application, is used to provide communication between the research and intervention teams and the TSVI-EIs in the Experimental Group. Separate learning modules are provided for Coached and Non-Coached TSVI-EIs. Online resources for Experimental Group TSVI-EIs are also available on Canvas.

D. INVENTIONS, PATENT APPLICATIONS, AND/OR LICENSES

Nothing to report.

E. OTHER PRODUCTS

All items created for this project contain copyright attributions, and none are being shared outside of the project at this time, pending results from Study 5. The products created for the MRVI Intervention project were described in the previous Performance Report. The MRVI Intervention itself will be a product, as are the BEET-IT, the Eating Behaviors Checklist, and the Mealtime Communication Measure, described earlier in this report.

III.   PARTICIPANTS AND OTHER COLLABORATING ORGANIZATIONS

A. WHAT INDIVIDUALS HAVE WORKED ON THE PROJECT?

The individuals below were discussed in more detail in the previous Performance Report. Vitae for key personnel (Clark, Erskine, Ferrell, Smyth, Zaghlawan), as well as updates to current and pending support, are included elsewhere in this package.

Alena Clark, Ph.D., M.P.H, RD, CLC, Co-Investigator, is a registered dietitian and an Associate Professor at the University of Northern Colorado with extensive clinical and research experience in the areas of nutrition during pregnancy and infancy, breastfeeding support, and nutrition in child care centers. She scores videos monthly using the NCAST Parent/Child Interaction Feeding Scale and reviews anthropometric data and BEET-IT submissions.

Aaron Dewald, M.S., M.Ed., **Technology Consultant,** assists the Research Team with customized data collection tools and helps to solve technology issues.

Jamie Erskine, *Ph.D., RD,* **Co-Principal Investigator**, is a registered dietitian, a Professor of Nutrition and Dietetics, and the Director of the School of Health Sciences at the University of Northern Colorado. She collaborates with the Principal Investigator to provide oversight for the MRVI Intervention Project, following university policies and procedures, state and federal fiscal regulations, and IES reporting requirements. She scores the videos monthly using the NCAST Parent/Child Interaction Feeding Scale, and reviews anthropometric data and all BEET-IT submissions. She also communicates with Dr. Pickler (Medical Consultant) when health issues involving child participants arise.

Kay Alicyn Ferrell, Ph.D., Principal Investigator, is Research Professor at the University of Northern Colorado. She provides experienced IES grant leadership for the MRVI Intervention Project and expertise in development of young children with visual impairment. Ferrell collaborates with Erskine and the university to meet all policies and procedures, state and fiscal

regulations, and IES reporting requirements. Ferrell manages all project funds, in collaboration with Dr. Erskine, including hiring documents, independent contracts, work for hire contracts, transportation and stipends for participants, and purchasing. She has obtained office space and equipment for the project and shepherded the IRB documents for all five studies. Ferrell scores the MRVI Eating Behaviors Checklist and assumes the majority of Project Coordinator Smyth's responsibilities during the her illness and recovery.

Zoe L. Morgese, M.A., Speech/Language Pathologist, is a consultant on the MRVI Intervention Project. She scores the monthly NCAST, Mealtime Communication Measure, and the PICCOLO, and provides ongoing communication and feeding development expertise to the Research Team.

Hong Phangia Dewald, M.A., Graduate Research Assistant, assists the MRVI Intervention Research Team. Her duties have included creating data collection spreadsheets for all assessments and editing all Canvas Course content. She is trained on the Erhardt Developmental Prehension Assessment (EDPA) for monthly data collection and inter-observer agreement. Dewald also scores the Eating Behaviors Checklist.

Laura Pickler, M.D., M.P.H., Developmental Pediatrician, provides consultation to the MRVI Intervention Team through feeding content knowledge and medical recommendations. She reviews child participant growth charts and consults with the Research Team as needed.

Carol Puchalski, M.A., Developmental Psychologist, is a consultant on the MRVI Intervention Project. Ms. Puchalski scores the monthly PICCOLO and NCAST and provides ongoing parent-child relationship expertise to the Research Team.

Rose Shaw, Ph.D., is the statistical consultant for the MRVI Intervention Project.

Catherine Smyth, M.S., M.Ed., Ph.D., Project Coordinator, serves as the point of contact for everyone on the Research Team and study participants, and she maintains the availability of the data collection technology. She also schedules monthly staff meetings for the Research Team, develops agendas, and distributes minutes. Smyth scores the monthly MRVI Mealtime Communication Measure, NCAST, and Implementation Fidelity. She is responsible for the materials that are stored in OneDrive and providing appropriate access to the MRVI Research Team. Most of these duties have been assumed by the PI during Smyth's illness; scoring responsibilities have been redistributed to other members of the Research Team.

Carol L. Spicer, B.S., Occupational Therapist, is a consultant on the MRVI Intervention Project. She is trained on the Erhardt Developmental Prehension Assessment (EDPA) for data collection and inter-observer agreement, and provides ongoing fine motor and feeding development expertise to the Research Team. She scores and reviews the Behavioral Pediatric Feeding Assessment for any concerns and is the liaison to Dr. Laura Pickler at Children's Hospital Colorado. She also scores the Erhardt and implementation fidelity measures.

Hasan Zaghlawan, Ph.D., Co-Investigator, is an Assistant Professor at the University of Northern Colorado in Early Childhood Special Education. Dr. Zaghlawan is also a certified coach and trainer in the Routine-based Home Visit Model. Zaghlawan calculates inter-observer agreement monthly and provides feedback to members of the Research Team.

The following individuals assisted with the development of the scoring system for analysis of dietary intake (BEET IT) data during this second performance period:

Erin Crews, Registered Dietitian, Sunrise Community Clinic, Greeley, CO
Catherine Lingard, M.S., Registered Dietitian, The Children's Hospital, Aurora, CO
Jenna Lenhart, Registered Dietitian, Sunrise Community Clinic, Greeley, CO
Jackie Nielsen, M.S., Registered Dietitian, Partners in Nutrition LLC, Loveland, CO

B. WHAT OTHER ORGANIZATIONS HAVE BEEN INVOLVED AS PARTNERS?

Letters of commitment were received prior to funding of the MRVI Intervention project, indicating a willingness to participate in the research. These organizations provide Early Intervention services to families with infants and toddlers with visual impairment across the United States. Participants for Studies Two, Three, Four, and Five were recruited first from the following organizations that submitted letters of commitment:

- Children's Center for the Visually Impaired (Missouri) (resulted in two participants)
- Illinois State University EL VISTA Project (resulted in one participant)
- Maryland School for the Blind (did not refer a participant)
- New Mexico School for the Blind and the Visually Impaired (resulted in one participant)
- Utah State School for the Deaf and Blind Parent Infant Program (resulted in two participants)
- Visually Impaired Preschool Services (Kentucky) (resulted in one participant)
- Washington State School for the Blind (resulted in two participants)

The University of Northern Colorado's Office of Sponsored Programs helps principal investigators and project directors with all aspects of managing a funded award, from negotiation and acceptance of the award to the final close out.

The University of Northern Colorado's Institutional Review Board (IRB) has reviewed and approved all five studies of the MRVI Intervention Project (the approval letter for Study Five is attached to this package). UNC has implemented the IRBNet system to streamline the IRB application and review process. IRBNet provides a paperless, electronic method for submission, tracking and review of applications for IRB approval.

Anchor Center for Blind Children in Denver, Colorado, provided meeting space free of charge for the week-long Study Two training in January 2017 and again for the Study Five

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training in January 2018. Anchor Center is a nonprofit organization dedicated to providing early intervention and education to children birth to five years old who are blind or visually impaired. The Principal Investigator has been a member of Anchor Center's Professional Advisory Board since 1992. During the training, the University of Northern Colorado added Anchor Center to its liability insurance policy, for the protection of both Anchor Center and UNC.

IV.   IMPACT

A. **WHAT IS THE IMPACT ON THE DEVELOPMENT OF THE PRINCIPAL DISCIPLINE(S) OF THE PROJECT?**

While we anticipate an impact on both special education and nutrition and dietetics fields, we have nothing to report at this time.

B. **WHAT IS THE IMPACT ON OTHER DISCRIPLINES?**

Nothing to report.

C. **WHAT IS THE IMPACT ON THE DEVELOPMENT OF HUMAN RESOURCES?**

Nothing to report.

D. **WHAT IS THE IMPACT ON PHYSICAL, INSTITUTIONAL, AND INFORMATION RESOURCES THAT FORM INFRASTRUCTURE?**

Nothing to report.

E. **WHAT IS THE IMPACT ON TECHNOLOGY TRANSFER?**

Nothing to report.

F. **WHAT IS THE IMPACT ON SOCIETY BEYOND SCIENCE AND TECHNOLOGY?**

Nothing to report.

G. **WHAT DOLLAR AMOUNT OF THE AWARD'S BUDGET IS BEING SPEND IN FOREIGN COUNTRY(IES)?**

Nothing to report.

V. CHANGES/PROBLEMS

A. CHANGES IN APPROACH AND REASONS FOR CHANGE

The primary change in approach and the MRVI Intervention itself has been the elimination of individualized coaching when there appeared to be no effect for either the TSVI-Eis (Study Three) or the Caregivers and Children (Study Four). Other changes involved the use of assessment instruments and the collection of data. These were described earlier in the report, but are included here for clarity.

Growth Data

Study 4 informed us of the feasibility of requesting monthly growth data. Because growth patterns can be determined as the result of nutritional status by tracking every three months rather than monthly, this change was made in the protocol for Study Five. This aligns with more typical frequency of physician/clinic visits even for at-risk children. Factors other than nutrition and dietary intake may affect growth such as health conditions, prematurity, or congenital anomalies. To better assess growth patterns and safety of the intervention, a Child Information Questionnaire was collected from each family. This includes health information, gestational age at birth, medical diagnoses that may affect growth and development, and demographics that have also been shown to influence development. Thus, a child with conditions associated with delays will be assessed in the context of changes from baseline rather than strictly by chronological age.

Missing Data

About 25% of videos were never submitted during Studies Three and Four. Data collection was also less than optimum for dietary intake (BEET IT). To enhance compliance with monthly food and beverage intake reporting (as well as submission of videos and other required project activities), a monthly monetary incentive of $25 will be sent to Caregivers once all data have been submitted. Email updates are sent to TSVI-EI—Caregiver dyads monthly to let them know what has been submitted and what is still needed. To enhance accuracy of BEET IT reporting, the TSVIs for the Experimental group and parents/Caregivers for the Business-as-Usual group will be contacted directly by Drs. Clark and Erskine if clarification is needed regarding their reporting.

Analyzing Dietary Intake

Changes have been made to the scoring system for analyzing the BEET IT dietary intake information. One example is removing whole grains from the healthy food choices and the variety of foods consumed categories. There is no evidence that whole grains provide a greater benefit toward health over a variety of types of grains and grain-containing foods for this age group. Due to the lack of specific reporting or the lack of consumption of whole grains, these

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categories scored inappropriately low whereas all of the children were consuming items from each food group most of the time.

Assessment Instrument Changes

As described earlier, the MEISR (McWilliam & Younggren, 2012) has been replaced by a criterion-referenced MRVI Eating Behaviors Checklist, compiled by the Research Team. This checklist will also be incorporated into the MRVI Intervention itself, but is being used in Study Five to get a snapshot of developmental eating skills in child participants. We have also replaced the Parent Confidence and Efficacy Scale (Dunst& Rabb, 2002) (which only has 4 items) with the PICCOLO (Roggman, Cook, Innocenti, Norman, & Christiansen, 2013), which offers more items and addresses affection, responsiveness, encouragement, and teaching in Caregivers.

B. ACTUAL OR ANTICIPATED PROBLEMS OR DELAYS AND ACTIONS OR PLANS TO RESOLVE THEM

No anticipated problems or delays during the next reporting period.

C. CHANGES THAT HAVE A SIGNIFICANT IMPACT ON EXPENDITURES

Increasing payments for family participants to once per month (pending submission of all data) increases the stipend from $100 to potentially $300 per family. This will amount to no more than $2800 than originally budgeted, but the funds are available elsewhere in the budget.

The Principal Investigator requested and received permission to increase her time commitment to the project beginning March 15, 2018, from 40% to 50% of the calendar year, due to the current illness and hospitalization of the Project Coordinator. This creates an additional $15,673 in salary and benefits for the second project year. These funds are also available elsewhere in the budget. The recovery period for the Project Coordinator may require an adjustment to the Research Team's effort, but this is only speculation as this Performance Report is submitted.

D. SIGNIFICANT CHANGES IN USE OR CARE OF HUMAN SUBJECTS

Nothing to report.

E. CHANGE OF PRIMARY PERFORMANCE SITE LOCATION FROM THAT ORIGINALLY PROPOSED

Nothing to report.

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VI.   SPECIAL REPORTING REQUIREMENTS

Nothing to report.

VII.   BUDGETARY INFORMATION

Since the first reporting period ended on 2/28/2018, $433,252.52 has been expended in this second reporting period. The project is committed to at least $185,188 in salaries, wages, fringe benefits, consultants, materials and supplies, other direct costs, and indirect costs through the end of the second Project Year on June 30, 2018. This leaves a balance of $10,726 in the budget, some of which may be expended for requested materials and supplies and other direct costs. We therefore request a carryover of somewhere around $10,726. Details are provided below.

Budget Narrative

Salaries, wages, and fringe benefits. All expenses for salaries, wages, and fringe benefits for project personnel have been expended or encumbered as projected in the negotiated budget. An increase in the PI's effort from 40% to 50% for the calendar year was approved by the Project Officer on March 21, 2018, based on the Project Coordinator's illness. This increase is reflected in the Professional Salaries line column "Commitments through 6-30-2018" and results in an over-expenditure in total salaries, wages, and fringe benefits of less than 1%

Travel and changes in budget. The travel line has been overspent during the first and second reporting period. The training in Denver continues to be our largest expenditure in this line, and we once again exceeded our original projection (although we underestimated for this second training). Our Project Officer also approved unexpected travel related to dissemination, possible because of savings in Other Direct Costs.

Other Direct Costs

Materials and Supplies. Covered in this line was the purchase of a printer dedicated to the project plus per page printing charges. Supplies included the purchase of assessment materials for use by the Research Team and intervention materials distributed to the TSVI-EI participants. Shipping costs will be incurred before the end of this project year.

Consultant Services. Independent contracts and work for hire agreements have been executed with all consultants. Some are a little quicker than others at submitting their invoices, but all funds requested have been paid or are encumbered through the end of June 2018.

Funds remaining in Other Direct Costs resulted from savings that we detailed in the previous Performance Report and some of the changes made in the intervention (eliminating

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coaching, and thus no longer needing digital transcription and qualitative analysis). We followed university policy (one-half of tuition and fees in lieu of additional wages for each Graduate Research Assistant (GRA) employed at 20% for the calendar year) in budgeting for our GRA's tuition, but we were fortunate to hire a doctoral student with more experience – which also meant that she needed fewer courses. In addition, we have broken out stipend costs for this and future reporting periods. Some stipends for TSVI-EI and Caregiver participants in Study Five were not processed by 2/28/18. The change in Caregiver stipends (from $100 per Caregiver, to $25 per month per Caregiver in Study 5) to encourage timely submission of data potentially increases the stipend request by $2800.

Summary. As of February 28, 2018, expenditures of $719,705 have been incurred for both performance periods, and encumbrances and commitments through the end of Project Year Two total $185,188. We thus anticipate a carry-over request of approximately $10,726 into the next project year. We request the carryover of all unspent funds so that (a) we can cover the training expenses for the Business-as-Usual Group in Study 5 during Project Year Three; and (b) we can allow for additional staff time if our Project Coordinator requires extended leave due to her illness. We will keep our Project Officer apprised of our progress in our quarterly reports.

SF 424 Budget Categories	Grant Funds Awarded	Total Grant Expenditures, 7/1/2016 – 2/28/2018	Commitments through 6/30/2018	March-June 2018 Expenses and Carryover Requested
Professional Salaries	$317,674	$258,765	$61,305	-$2,396
Fringe Benefits	$87,046	$68,981	$16,480	$1,585
Grad Student assistant stipends	$19,608	$16,340	$3,268	
A+B. Total Salary, Wages, & Fringe Benefits:	$424,328	$344,086	$81,053	-$810
D. Travel	$33,883	$38,827	$0	-$4,944
E. Other Direct Costs:	$210,524	$149,090	$44,955	$16,480
1. Material & Supplies	$15,845	$10,049	$1,500	
3. Consultant Services	$145,478	$106,123	$39,355	
8. Transcription, etc.		$15,405	$0	
9. GRA Tuition	$10,605	$3,812	$0	
10. Participant stipends		$13,700.	$4,100.	

SF 424 Budget Categories	Grant Funds Awarded	Total Grant Expenditures, 7/1/2016 – 2/28/2018	Commitments through 6/30/2018	March-June 2018 Expenses and Carryover Requested
Indirect costs	$246,883	$187,702	$59,181	
Totals, 7/1/2016 – 2/28/2018	**$915,618**	**$719,705**	**$185,188**	**$10,726**

Note. Shaded cells are included in the category of "Other Direct Costs." Some numbers are rounded up to the next dollar.

OTHER COMPONENTS OF THE ANNUAL REPORT PACKAGE

2. PUBLICATIONS

No publications at this time.

3. CURRICULUM VITAE

Updated CVs for key personnel have been attached to the Annual Report Package, including statements of current and pending funding for each.

4. IRB

IRB approval for Study Five is attached.

5. ADDITIONAL INFORMATION

Included in this part of the package are the following files, found in this order:
1. Inter-observer agreement for Studies Three and Four
2. Statistical Report, January-June, 2017
3. Statistical Report, January-December, 2017
4. BEET-IT Scoring Sheet
5. TSVI Implementation Fidelity Form
6. Caregiver/Child Mealtime Behaviors
7. Supplemental Analysis of the Coaching Practices Rating Sheet
8. MEISR Analysis
9. Erhardt Developmental Prehension Assessment Analysis
10. Video Protocol for the Experimental Group

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11. Video Protocol for the Business-as-Usual Group
12. Evaluation of Smyth & Spicer's WREIC Workshop, June 2017
13. Clark & Erskine's poster presentation at the Annual Meeting of the Academy of Nutrition and Dietetics
14. Ferrell, Erskine, & Smyth's poster at CRIEI, March 2018
15. Dewald & Smyth's poster at CRIEI, March 2018

6. **SF 4424 RESEARCH & RELATED BUDGET FORM – SECTIONS A & B; C, D, E, AND F-K**

This form is attached in the package.

References

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