Parents' Self-Efficacy and Early Intervention Following Neonatal Intensive Care Unit Discharge

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Rationale

- Each year, over 300,000 newborns are admitted to a Neonatal Intensive Care Unit (NICU) across the country.
- Admission to a NICU alone identifies child at increased risk for developmental delays and disabilities.
- Additional concern lies in the outcomes for the families of NICU graduates, including increased stress and anxiety, comprised quality of parent-child interactions, and sometimes parent reported diminished levels of parental self-efficacy.
- This population of children and their families can benefit from family-centered early intervention (EI) services funded by Part C of the Individuals with Disabilities Education Act (IDEA, 2004).
- Given the often-limited time and financial resources of these community programs, it is essential that services are maximized to positively influence both child and family outcomes, and parent self-efficacy.

Objective

- To examine the relationship between early intervention program factors and parents' reported perceptions of family-centered practices in their early intervention programs.
- To examine the relationship between parents' perceptions of their ability to positively influence their children's development (parent self-efficacy) post-NICU discharge and sociodemographic factors, medical factors related to NICU admission, child factors related to current developmental level, and parents' perceptions of family-centered practices in their early intervention program.

Methods

Participants (*n*= 148)

- Enrolled in statewide NICU follow up program and Part C Early Intervention Services

Measures

- **Demographic questionnaire** (relationship to child, parental education level, child's race, current family insurance coverage, the length of enrollment, location and dosage of family's early intervention services.
- ***Ages and Stages Questionnaire*** (ASQ-3; Squires, Twombly, Bricker, & Potter, 2009); utilized to derive a composite developmental level (0-10; with 0 being typical development, 5=1 *SD* below mean, 10= 2 *SD* below the mean)
- ***Family-Centered Practices Scale*** (extended version) (Dunst and Trivette, 2004); evaluates family-centered practices; 3 items used to establish a variable for the program factor of level of parent involvement with program professionals; rated on a scale: 0= *never* to 5= *all of the time*
- ***The Early Intervention Parenting Self-Efficacy Scale*** (EIPSES; Guimond et al., 2008); A16-item rating scale used to evaluate parent beliefs about their ability to produce positive changes in their child who has developmental delays or disabilities and promote their child's development, rated on a 1= *strongly disagree* to 7= *strongly agree* gradient

Retrospective Review of Medical Records

- Medical variables of interest: birth weight, gestational age, congenital anomalies, and length of stay in the NICU.

Analyses

- Descriptive statistics
- Multiple linear regression for relationship between self-efficacy and factors of interest
- Pearson Correlation for relationship between level of parent involvement and perceived level of family-centered practice
- Independent samples T-tests to compare high and low self-efficacy groups

Participants (*n* =148)

Medical and Child Factors	
Birth weight (kg)	2.01 (*SD* = 1.01)
Gestational age at birth (weeks)	32.63 (*SD* = 5.06)
Length of stay(days)	50.37 (*SD* = 46.33)
Multiple births	66%
Congenital anomaly	39%
Male/Female	50%/50%
Current age of child (months)	26.52 (*SD* = 8.76)
Developmental level composite (0-10 score)	3.82 (*SD* = 3.48)

Sociodemographic Factors	
Private Insurance (SES proxy)	81%
Caucasian	83%
Parent Education	
Less than 8th grade	1%
Some high school	2%
High school/GED	17%
Associate's degree	4%
Some college	15%
Bachelor's degree	39%
Post-Graduate degree	21%

Program Factors

Relationship to child	
Mother	96%
Father	2%
Other	2%

Length of time enrolled in EI	
less than 6 months	6%
6-12 months	23%
12-18 months	19%
18-24 months	26%
More than 24 months	26%

Location of EI services	
home	88%
child care	2%
clinic/office	6%
center-based EI	2%
other	2%

Dosage of EI services	
less than 1 time per month	1%
1 time per month	10%
2 times per month	30%
3 times per month	30%
4 times per month	6%
More than 4 times per month	23%

Results

Outcome Mean Scores

Outcome	Mean (*SD*)	Range
Family-Centered Practices Scale (*n* =146)	4.40 (0.33)	3.25-5
EIPSES (*n* =142)	5.72 (0.73)	3.06-6.94
ASQ-3 (Child developmental level composite) (*n* =147)	3.82 (3.48)	0-10

Parent involvement level was the only program factor significantly related to family-centered practices

Family-Centered Practices Scale Parent involvement items	Correlation with Family-Centered Practices composite score
Child-focused intervention[a]	- 0.200*
Parent-focused intervention[a]	- 0.071
Parent-Child focused intervention	0.151

a: These items are reversed scored on the 1 to 5 scale; *Pearson correlation coefficients significant at the $p < .05$ level

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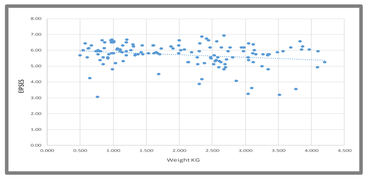
Lower birth weight is associated with higher levels of parent self-efficacy

	b	SE	β	p-value
Birth weight*	- 0.20	0.08	- 0.29	0.015
Gender (male)	-0.01	0.12	-0.01	0.912
Caucasian	0.10	0.18	0.05	0.573
Parent Education	-0.02	0.05	-0.04	0.672
Insurance type	0.25	0.18	0.14	0.168
Congenital anomaly	0.24	0.14	0.17	0.096
Length of stay	0.00	0.00	-0.02	0.876
Developmental level composite (ASQ-3)	0.00	0.02	-0.02	0.790
Family-centered practice	0.24	0.17	0.12	0.163

Outcome is parent self-efficacy; *Significant at the $p < .05$ level

Correlation between birth weight and parent self-efficacy



Differences noted between high and low scores of self-efficacy

	≤ 5 EIPSES *n*= 19 M (*SD*)	> 5 EIPSES *n*= 123 M (*SD*)	*t*	df	*p*-value
Birth weight (kg)	2.57 (1.02)	1.94 (0.99)	2.45	134	0.016
Gestational age (weeks)	35.16 (4.80)	32.32 (4.97)	2.33	140	0.021
Length of stay in days[a]	27.72 (22.53)	53.32 (48.11)	-3.73	44.49	0.001
Percent of multiple births[a]	0.11 (0.32)	0.39 (0.49)	-3.36	33.24	0.002

a: Levene's test for equality of variance significant, significance test uses adjusted degrees of freedom; *Significant at the $p < .05$ level

Discussion and Implications

- Findings suggest a significant, low but negative correlation between perceived family-centered services and reports of child-focused early intervention services. As the reported level of overall family-centered practices increased, the ratings on the child-focused item decreased. This finding has implications for early intervention programs regarding the focus of their interventions. The influence of parent and parent-child focused interventions on parent-self efficacy must be considered by programs as they strive to meet the intent of family-focused IDEA Part C early intervention for NICU graduates.
- Findings revealed a meaningful relationship between lower birthweight and higher levels of reported parent self-efficacy on the EIPSES, for these parents enrolled in Part C programs. This finding is encouraging as an independent study conducted by McManus, Carle, and Poehlmann (2012) found that strengthening the supports for mothers via Part C early intervention programs improved children's trajectories in cognitive functioning.
- A comparison between parents with higher and lower ratings of self-efficacy revealed the group with higher self-efficacy had children with lower birth weights, younger gestational age, longer length of NICU stay, and were more likely to be born from a multiple gestation pregnancy. Further research must examine factors associated with these between group differences (e.g., supports during NICU stay, social supports, factors related to the early intervention provision for the group with lower ratings).