Development of Parenting Self-Efficacy in Mothers of High-Risk Infants

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Abstract

Purpose: The aim of this prospective, longitudinal study was to (1) examine the development of parenting self-efficacy (PSE), (2) explore the influence of contextual factors (e.g., family functioning, family centered care, and infant medical caregiving complexity) on PSE development, and (3) whether PSE and contextual factors predict parent and infant health outcomes in a high-risk infant population.

Method: Mothers (n=67) of infants diagnosed with a complex medical condition following birth were enrolled within three weeks of their infant's diagnosis and admission to intensive care. Participants completed an online study survey at study enrollment (T1), infant discharge (T2), and three months after discharge (T3). Change in PSE was examined using mixed modeling and predictors of parent and infant health outcomes were explored using multiple regression.

Results: PSE significantly increased over time (b = 2.08, p <.0001). Family functioning was the only significant contextual factor, where worse family functioning at enrollment was associated with lower confidence over time. Mothers who were older and had more than one child were significant predictors of higher PSE. Interestingly, being married, compared to being single, was associated with decreased PSE. Higher PSE was also predictive of positive maternal psychological

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wellbeing at three months after discharge and a decrease in infant's medical complexity was associated with higher maternal psychological well-being.

Conclusion: These are important findings given that PSE is known to contribute to infant development and health status.

1. Introduction

Infants with medical complexity (IMC) is a population of infants characterized by having one or more complex medical diagnosis, technology dependence, functional limitations, and high healthcare use [1]. The caregiving demands of these infants include ongoing medical, developmental, and social support for both the infant and family [2, 3], often with lengthy hospitalizations and technology dependency post-discharge [4]. When an infant with medical complexity is hospitalized, there are a multitude of stressors for parents. There may be limited physical contact between an infant and mother, and this separation can change how a mother feels in her parental role [5, 6], lead to psychological distress [7, 8], and disrupt family functioning [9, 10]. Not only are parents challenged with parenting while their infant is hospitalized, but they often have to learn new parenting skills associated with complex medical care. They need to learn to master complex treatment regimens, navigate multiple healthcare and social service systems [11, 12], and communicate with multiple providers and/or specialists [13]. In this context, parent's brave unfamiliar territory within the hospital and adapt their home environment in order to optimize their infant's growth and development.

Parenting self-efficacy (PSE) is an aspect of parenting that contributes to a parent's capacity to be responsive and attentive to their child's needs. PSE refers to a parent's internal belief about their ability to successfully engage in parenting behaviors that influence their child's health and development [14]. Parents who feel more confident or efficacious in their parenting role are more likely to facilitate positive parenting experiences with their infant [15], which promotes both neurodevelopmental and health outcomes [16]. Notably, PSE acts as a buffer in challenging situations and enhances resiliency [17, 18], which is especially useful in the context of parenting an infant with complex medical care needs.

Few research studies have identified associations between PSE, specific contextual factors such as family functioning, family-centered care, and infant medical caregiving complexity or infant health outcomes. The three contextual factors in this study are related to how a mother adjusts to the parenting role; yet, little is known how these specific factors may influence the development of PSE over time in a high-risk infant population. To address these gaps in the literature, this longitudinal study had two primary aims. The first aim was to examine the development of PSE over time and the influence of demographic characteristics and contextual factors (family functioning, FCC practices, infant medical caregiving complexity) on PSE development in mothers of high-risk infants. We

hypothesized that (1) PSE would increase over time from enrollment to three months after discharge, and (2) contextual factors (e.g. better family functioning and family centered care and low infant medical complexity) would be associated with higher PSE over time. The second aim sought to understand if change in PSE or contextual factors predicted maternal psychological and infant health outcomes. We hypothesized that higher PSE would predict better psychological and infant health outcomes (e.g., fewer ED visits and rehospitalizations) at three months after discharge.

2. Methods

2.1 Setting and participants

This longitudinal, exploratory study was conducted in a Level IV Intensive Care Nursery (ICN) and Pediatric Cardiac Intensive Care Unit (PCICU) at a large academic medical center in the Southeast United States. The Institutional Review Board approval from the Health System was obtained prior to the start of the study. Participants in the sample included mothers and their infants diagnosed with a complex chronic condition. Eligibility for the study was determined by a weekly chart review of admissions to the PCICU and ICN for infants who had an admission or primary diagnosis that was identified as a complex chronic condition using Feudtner et al. (2014) classification system, which is a list of IDC-10 codes that are associated with medical complexity. Inclusion criteria for mother's included: (1) English speaking, and (2) the infant would be discharged into her care. Adolescent (< 18 years old) and adoptive mothers and parents of multiples were excluded because their parenting trajectory have unique characteristics not suitable to study at this time. Mothers consented to participate for themselves and their infant.

2.2 Procedure

Mothers completed self-report online questionnaires at three time points during the study period: (1) admission to hospital following birth (T1), (2) infant discharge from hospital (T2), and (3) three months after discharge (T3). After consenting, participants were emailed a hyperlink to complete the survey. If they did not have access to email, a smartphone, or computer to complete survey, paper copies were made available. Total completion time for each survey was approximately 20 to 30 minutes. All data were stored on a secured, encrypted network.

2.3 Measures

2.3.1. Parent and Infant Outcomes—Parenting self-efficacy (PSE) was measured using the *Karitane Parenting Confidence Scale* [19]. This is a validated 15-item, task-specific scale for parents of infants from 0–12 months. Items are scored on a 4-point scale (0 – 3) with higher scores indicating better self-efficacy (i.e., confidence). This scale was used because it is sensitive to detecting significant changes in total scores over time and has a clinical cut-off index. Scores 39 indicate parents may have clinically low confidence and need more support in their parenting role. PSE was measured at enrollment, discharge, and three months after discharge using total scores in the analysis. This measure had acceptable internal consistency (Cronbach's α = 0.81) and test-retest reliability (r = 0.88) (Crncec et al., 2008). The Cronbach's alphas for this study were acceptable across the study time points,

enrollment (α = .84), discharge (α = 0.79), and three months (α = 0.76). Mother's psychological health was measured using the *Psychological General Well-Being Scale* (PGWBS) [20]. This is a 22-item measure, which asks about general physical and psychological health in the past two weeks. Items are scored on a 5-point scale. Scores of 0 – 60 indicate "severe distress," scores 61–72 indicate "moderate distress," and scores 73 – 100 indicate "positive well-being." This scale has been used in multiple diverse samples. Total scores from this scale were used in the analysis and measured at enrollment and three months after discharge. The Cronbach's alphas were acceptable in this study: enrollment (α = 0.93) and three months (α = 0.94).

Emergency department (ED) visits and rehospitalizations were used to assess infant health outcomes three months after discharge. Counts of ED visits and rehospitalizations were compiled from a retrospective chart review of the infant's medical record. To confirm accuracy of chart review, ED visits and hospitalizations were also confirmed by parent report from the three months survey. The total numbers for both ED visits and hospitalizations were used in the analysis.

2.3.2.   Contextual Factors—Family functioning was measured using the *Family Assessment Device* (FAD) [21]. The FAD is a 12-item measure of the general health and overall functioning in families; including communication, behavior, and perceptions of others. Participants were asked to rate statements based on how well it describes their family on a four-point scale ranging from "strongly agree" to "strongly disagree." An average score was calculated from the 12 items, with scores representing better functioning (1) to worse functioning (4). Scores less than or equal to 2 indicate healthy family functioning. FAD was measured at enrollment, discharge, and three months after discharge. The Cronbach's alphas in this study were consistently satisfactory across data time points: enrollment (α = 0.84), discharge (α = 0.88), and three months (α = 0.87). Family centered care (FCC) practices was measured using the *Help-Giving Practices Scale* [22], a 12-item scale designed to measure perceptions of how well health care providers engage in FCC practices. Participants were asked to rate, on a scale of 1 ("rarely") – 5 ("almost always"), a help-giving statement based upon whether the interaction occurred in a family-centered manner. Total scores were used in this study, with higher scores indicating that providers were more likley to provide help-giving services. FCC was measured at discharge only. The Cronbach's alpha was .95 for this study.

Infant medical caregiving complexity was measured using the *Technology Dependence Scale* (TDS) [23]. The TDS was created to capture change in technology dependence overtime and across all types of diagnoses by calculating a cumulative score of daily technological needs, whether in the home or hospital setting. There are 12 items that score technology dependence in the following care domains: level of care, invasive lines, nutrition, monitors, blood draws, respiratory assistance, skin care, oral care, external drains and/or catheters, mobility, transfusions, and medications. The more frequent monitoring or amount of technological support, the higher the TDS score. Each point increment indicates increasing severity with higher scores representing a greater dependence on technology and more medical complexity. Scoring for this study was conducted from a retrospective chart

review of the infant's record. TDS was measured at enrollment, discharge, and three months after discharge.

2.3.3   Maternal and infant demographics—Maternal demographic characteristics were collected from the enrollment survey and included information about age, sex, marital status, education level, race/ethnicity, employment, occupation income, health insurance, prenatal care, hospital experience, living situation, and family structure. Discharge and three months after discharge surveys included additional information about home monitors, medications, hospital visits, additional diagnosis, and infant growth information. Infant demographic characteristics were collected from parent report and a chart review of the medical record and included sex, gestational age at birth and discharge, admission diagnosis, any additional complex chronic conditions, length of hospitalization, medications at discharge, additional technology (ie. oxygen, tube feedings, etc) at discharge, and growth parameters.

2.4   Statistical Analysis

All the analyses were conducted using SAS 9.4. (Cary, NC). Descriptive statistics were computed to describe the sample characteristics, outcome variables, and contextual factors. General linear mixed models were used on the longitudinal data to examine the development of PSE [24]. Mixed modeling is a flexible statistical framework whereby regression of each participant is represented as a deviation from the group regression. The effect on outcomes for every participant is modeled as a sum of the fixed effect and random effect. As such, the model can accommodate missing data or partial data, due to attrition, without imputing the missing data because each participant is represented in the model. A preliminary analysis of potential differences in PSE among diagnosis category (i.e., congenital birth defects, extreme premature, complex heart, and other) and admitting units (i.e., PCICU and ICN) indicated that there was no significant difference in PSE among diagnosis categories and units; therefore, diagnosis category and unit of admission were not included as covariates. In all models, infant length of stay (LOS) was used as a time-varying covariate to account for variation in gestational age of infants and varying length of time between enrollment and discharge from the hospital. Even though LOS was not significant in any model, it was conceptually relevant to control for this variable given our lack of information about how hospital duration contributes PSE.

A sequential modeling approach was used to test the specific aims of this study. In the first model, PSE was initially regressed over time controlling for LOS which was centered around its mean. This was used as the baseline model to test for change in PSE over time. In the second model, PSE was regressed over contextual factors, family functioning (FAD), family centered care (FCC), and infant medical caregiving complexity (TDS) as fixed effects based on the conceptual framework of the study. Interactions between family functioning, medical complexity, and time were tested in this second model, but were not significant; therefore, not included in follow-up models. In the third model, PSE was regressed over demographic characteristics (age, education, race/ethnicity, marital status prenatal diagnosis, number of children, infant sex, and total number of infant chronic conditions) and contextual factors. To develop the final parsimonious model (fourth model), the predictors with an

estimated significance level of $p < .10$ from the third model were retained for the purposes of variable selection only, but an alpha level of .05 was chosen for interpreting the results of this study.

After completing the above sequential modeling for the devolvement of PSE, multiple regression analysis was used to examine if PSE's initial status and change, as well as contextual factors and demographics, were associated with parent (psychological well-being) and infant health outcomes (ED visits and re-hospitalizations). Three regression models were tested for each outcome. Psychological well-being at enrollment was controlled for in the mother's regression model. LOS was not controlled for in this analysis because all participants completed the final survey at an average of three months after discharge from the hospital.

3. Results

Sixty-seven mothers were included in the final analyses, with 5 being excluded due to missing data (6.9%). There was no statistical difference in demographic characteristics between these five mothers and the final sample. The study had a 93.0% retention rate; mothers who completed the initial survey were more likely to be retained throughout the duration of the study and complete all the surveys (70.0%). Mothers were more likely to be married (60%), Caucasian (63%) and high school graduates (59%). Half of the infants were the first child (50%) and mothers had on an average of 1.9 children, including the infant in the study. The majority of infants were male (55%) and birth gestational ages ranged from < 28 weeks' gestation (28.6%), 28 to 37 weeks' gestation (37.3%), and > 37 weeks' gestation (34.3%). On average, infants had 3.3 complex chronic conditions and average LOS was 62.6 days. Most infants were technology dependent at discharge: home monitor (7%), G-Tube (19.4%), NG Tube (17.9%) and on an average of 3.4 medications; 13% (n = 8) of infants were discharged without any medication (Table 1).

Maternal PSE mean scores increased over time from T1 to T3 and mean scores at T2 and T3 were above the clinical index (> 39). Family functioning decreased over time (i.e., higher averages indicate worse functioning) (scores < 2). Family centered care practices were high at discharge and infant medical complexity decreased over time. Mothers' psychological wellbeing at three months was in the „positive wellbeing' range (Table 2).

Fit testing of the four mixed models was conducted. The first model included PSE intercept (for initial status) and slope (for change) (AIC = 961, $\chi^2(3) = 42.79$, $p < .0001$). After the stepwise approach to the modeling (i.e., gradually adding and removing contextual factors and demographic characteristics to/from models), the final parsimonious model (Model 4) was obtained (AIC = 931, $\chi^2(3) = 42.78$, $p < .0001$). Table 3 describes the development of PSE and effects of contextual factors, maternal and infant demographic characteristics. There was a statistically significant increase in PSE from enrollment to three months after discharge ($\beta = 2.08$, p <.0001) (see Table 3). The final parsimonious model indicated that being an older mother ($\beta = 0.15$, $p < .05$) or having more than one child ($\beta = 0.6$, $p < .03$) was significantly associated with higher PSE. Being married ($\beta = -1.9$, $p < .03$), or living with partner ($\beta = -2.4$, $p < .05$) as compared to being single was associated with a decrease

in PSE over time. There was an inverse relationship between PSE and family functioning, meaning lower family functioning scores indicate better family functioning, while higher PSE scores indicate greater efficacy (i.e., confidence). With a one-point increase in family functioning scores, (i.e., decreased family functioning) at each time, mother's PSE decreased by three and a half points ($\beta = -3.49$, $p < .0001$), indicating poorer family functioning contributed to lower PSE over time.

Predictors of maternal and infant outcomes at T3 are reported in Table 4. Mothers' psychological wellbeing regression model was statistically significant ($F(6,55) = 6.53$, $p < .0001$) and accounted for 45% of the variance. Controlling for maternal psychological wellbeing at enrollment, higher PSE initial status at baseline ($\beta = 15.61$, $p < .0097$) and PSE change (increase) over time ($\beta = 35.65$, $p < .012$) was predictive of better psychological wellbeing at 3 months post discharge ($\beta = 83.11$ $p < .0001$). In addition, as infant medical complexity decreased ($\beta = -0.51$, $p < .04$), maternal psychological well-being improved. The development of PSE did not predict either ED visits ($F(6,53) = 1.33$, $p < .26$) or rehospitalizations ($F(6,53) = 2.25$, $p < .06$). Only 12% of the variance in ED visits was accounted for by the predictors and 19% of the variance in rehospitalizations was accounted for by the predictors. In both the models, only infant medical complexity was associated with infant health outcomes (Table 4).

4. Discussion

This study contributes evidence to the relevance of parenting self-efficacy as an important parenting construct. Findings from this study further extend our knowledge of how PSE develops over time and factors associated with change in PSE among mothers of medically complex infants. The significant increase in maternal self-efficacy, from study enrollment (admission to hospital) to three months after discharge, is an important finding for this high-risk infant population because PSE is known to contribute to better infant development and health status [25]. At study enrollment, mothers' self-efficacy was below the clinical index of 39 indicating clinically low self-efficacy [17, 19, 26]; however, this is an expected finding given admission of an infant to intensive care following birth is an overwhelming time fraught with uncertainty. Within three weeks of birth (e.g. enrollment study period) is also a time when mothers are beginning to adjust to their new parenting role. Nonetheless, mothers often report feeling significant distress with an alteration in their parenting role when their infant requires hospitalization at birth [27, 28]. Knowing that self-efficacy was below the clinical cut off around the time of birth but improved throughout hospitalization is a reminder that mothers need opportunities to engage and interaction with their infant, an essential component in building self-efficacy.

Another major finding from this study was that lower maternal PSE was associated with poorer family functioning, and marital status or living with a partner. This research is consistent with and extends prior cross-sectional research [29, 30]. Family functioning is a measure of how well the family works together but it is not a measure of the couple's relationship or satisfaction with the partner (i.e. martial satisfaction). Our finding that being married or living with a partner was associated with lower PSE highlights an important issue regarding the development of PSE. Knowing the social context of the family and quality of

relationships between parents impacts the parenting process [31], other researchers have found that marital satisfaction and family functioning are highly correlated [29]. Yet, our study did not measure marital satisfaction, but it is possible that self-reported marital or partnered relationships may be a proxy for other constructs which may contribute to lower PSE. It is possible that in partnered relationships mothers experienced additional stress from either the inclusion of the partner in infant caregiving or "doing for" the partner in addition to the infant. The results from this study demonstrate the importance of including relational variables in studying parenting as the family environment and partnered relationships significantly contributed to the development of PSE.

Interestingly, infant medical caregiving complexity was not related to the development of PSE. This finding may be due to the fact that most of the infants recruited for this study were high-risk with complex caregiving from birth through 3-months post discharge. Thus, all infants were similar in their need for complex caregiving. Yet, other researchers have found evidence that medical caregiving complexity is a predictor of maternal caregiving stress and depression [23] and negativity influences family functioning [32]. Thus, further work is needed to understand in what ways does infant medical caregiving complexity influence PSE and/ other parenting outcomes such as mental health and quality of relationships.

Mother's age and the number of children was related to higher PSE over time. To our current knowledge, neither age nor having more than one child have emerged as predictors of higher PSE among mothers in of infants and young children. Often other studies focus on measuring PSE among first-time mothers; thus, number of children was not relevant in those studies [33, 34]. Experience with and more opportunities for parenting-specific behaviors that are likely to improve with age and multiple children are consistent with Bandura's theory that mastery experiences contribute to overall self- efficacy. Our findings revealed, higher PSE was associated with better maternal psychological well-being, which is consistent with other research [29, 35]. However, we did not find any association between PSE and infant health as other research has demonstrated [36]. Even though infant medical caregiving complexity decreased over time, it was associated with infant health (i.e., ED visits and rehospitalizations). This is an expected finding given that medical caregiving complexity is a reflection of infant's medical stability. The two units where mothers & infants were recruited had a robust multidisciplinary follow up program. This program provides 24/7 pager access to familiar providers for parents to address health concerns while at home. This program likely supported some of the mothers within the sample in their ability to manage caregiving and subsequent ED visits or rehospitalizations. Future research could explore how mothers manage complex caregiving at home to provide more insight into how parents and families maintain infant health and how providers can best support them throughout development.

Since medical caregiving complexity nor diagnosis category were predictive of PSE, future research should examine both high-risk and healthy term-born infants concurrently to examine PSE development. Other infant characteristics like developmental status, functional limitations, and temperament may offer better insight into the development of PSE, especially after hospitalization. The findings from this study demonstrate adequate empirical

evidence of change and predictors of change in PSE. Yet, a larger sample would allow for inclusion of additional predictor variables that may offer insight into PSE trajectory patterns, including quality of partnered relationships, quality of parenting (i.e. competence), depression or anxiety symptoms and stress. With more explanatory variables, a comprehensive representation of how parents develop confidence in parenting could be explained. Furthermore, inclusion of fathers is necessary to improve our understanding of PSE. Does it look the same for fathers? Do they display similar trajectory patterns as mothers, and if so, what contributes to higher PSE for fathers vs. mothers?

There was limited racial and ethnic diversity within the sample. A majority of our sample was Caucasian and had moderate to high levels of income, which limits the generalizability of the study to a more diverse population that is often present within neonatal and pediatric intensive care settings. Although some significance was found in this study with a relatively small sample size (< 100), future research with a larger sample size would be desirable to make the study findings more generalization to the target population. Additionally, the use of self-report measures may allow an individual to underestimate or overinflating scores, but the range of PSE scores in this study within and across subjects suggest that mothers are reporting actual perceptions of efficacy. Further work is needed that combines both quantitative and qualitative data to understand if there are potential differences in how they report self-efficacy. From this data it is also difficult to assess if the change in PSE will remain stable over longer period of time and the likelihood of influencing future neurodevelopment and socioemotional outcomes. One study of first-time mothers found that PSE peaked at three months postpartum and remained relatively stable until six months (study end) [34]. Future research should continue to examine the stability and variation in PSE over greater amounts of time that captures infant transitional developmental periods. Furthermore, providers could use a measure of PSE to assess or screen parents who might be in need of extra parenting support or additional resources during hospitalization or near discharge, especially to track progress with follow up visits.

Parenting can be difficult for any parent at any time and without the right support and resources, become an overwhelming task especially during hospitalization. The experience of having a sick infant has a substantial impact on the infant, parent, and extended family. It is a reassuring finding that PSE significantly increased over time despite the continued high complexity of care needed by their infants. Furthermore, healthy family environments positivity influenced PSE, emphasizing the importance of family support and quality interactions during such a stressful period. Infants with medical complexity need additional complex care leading to extra parenting demands such as manage complex care. Thus, in order to ensure optimal growth and development of these infants, it is essential that healthcare providers recognize their role in supporting parents to build capacity to interact and engage with their infant in all aspects of care required. Not only can we provide life-saving nursing and medical care, but we can empower parents to develop expertise in parenting so they can confidently care for their infants.

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Highlights:

- Parenting self-efficacy (PSE) increased over time among mothers of infants with medical complexity.

- Family functioning, age, and having more than one child was associated with higher PSE over time, while marital status was associated with lower PSE.

- Further research is needed to explore patterns of PSE and how infant illness trajectory influences the stability of PSE over time.

Table 1

Maternal/Infant Demographics and Illness Characteristics (N = 67)

Maternal Variables	Mean	SD
Age	30.05	5.43
Number of Children[a]	1.91	1.16
Education in Years	6.27	3.18
	n	**%**
Race		
non-Hispanic White	42	63
non-Hispanic Black	13	19
non-Hispanic Other	6	9
Hispanic	6	9
Marital Status		
Married	40	60
Single/Never Married	16	24
Living with Partner	9	14
Divorced/Separated	2	3
Income		
< 25,000	18	28
25,000 – 50,000	21	32
50,000 – 100,000	14	21
> 100,000	12	18
Private Insurance	36	55
Infant Variables	**Mean**	**SD**
Gestational Age (weeks)	33.81	5.74
Length of Stay (days)	62.62	45.58
Complex Chronic Conditions	3.31	1.60
Medications at Discharge	3.47	2.84
	n	**%**
Male	37	56
Sibling Rank		
1st child	33	50
2nd child	16	24
3 or more	18	26
Diagnosis Category		
Congenital Birth Defects	19	28.3
Extremely Premature	18	26.1
Complex Heart	16	24.6
Other	14	21.5
Prenatal Diagnosis (Yes)	38	57.5

[a]Number of children includes infant enrolled in study

Table 2

Descriptive Statistics of Measures

Instrument (Scale)	Enrollment[a]		Discharge		Month 3 after Discharge	
Contextual Factors	Mean	SD	Mean	SD	Mean	SD
Family Functioning (1–4)	1.44	0.37	1.48	0.40	1.62	0.36
Helpgiving Practices (12–60)			52.36	7.68		
Infant Medical Complexity (> 0)	21.22	7.55	16.31	7.45	6.81	6.80
Outcome Variables						
Parenting Self-Efficacy (0–45)	38.20	5.92	40.35	3.76	41.66	2.92
Maternal Psychological Wellbeing (0–110)					79.00	13.64
ED visits					4.44	2.74
Rehospitalizations					4.65	2.71

[a]Enrollment: admission to intensive care or diagnosis of complex chronic condition

Table 3

Mixed Models Comparison of Parenting Self-Efficacy and Fixed Effects

Parameter	Model 1	Model 2	Model 3	Model 4
		Contextual factors	*Demographics*	*Parsimonious model*
	Estimate	Estimate	Estimate	Estimate
Intercept[a]	38.36***	41.63***	38.95***	39.89***
Event[b]	1.79***	1.70**	1.91**	2.08***
FAD		−3.09**	−3.33**	−3.49***
HELP		0.04	0.02	
TDS		−0.05	−0.02	
Maternal Age			0.18^	0.15*
# of Children			0.58^	0.64*
Prenatal Diagnosis (yes)			0.24	
Infant Sex (male)			−1.17^	−1.20^
CCC			−0.14	
Marital Status				
Living with Partner (vs. Single/Never Married)			−2.74*	−2.42*
Married (vs. Single/Never Married)			−2.23*	−1.98*
Separated/Divorced (vs. Single/Never Married)			−1.42^	−2.78
Education				
College Graduate (vs. High School Degree)			−0.44	
Graduate Degree (vs. High School Degree)			−0.56	
Race/Ethnicity				
Hispanic (vs. White)			1.20	
non-Hispanic Black (vs. White)			−0.96	
non-Hispanic Other (vs. White)			0.55	

FAD: Family Functioning, HELP: Family centered care practices, TDS: Infant Medical Complexity; CCC: Complex Chronic Conditions

^ $p < .10$,

* $p < .05$,

** $p < .01$,

*** $p < .001$.

[a] Intercept centered around mean length of stay at 62 days.

[b] The event equals the slope.

Table 4

Predictors of Health Outcomes at 3 Months Post Discharge (N = 55)

	Parent Health[a]	Infant Health	
	Psychological Well-Being	ED Visits	Re-hospitalizations
	Beta (SE)	Beta (SE)	Beta (SE)
Intercept	83.11 (18.67)***	8.19 (3.00)**	6.04 (2.84)*
PSE Initial Status	15.61 (5.79)**	0.44 (1.31)	−1.13 (1.24)
PSE Change	35.65 (13.67)**	0.99 (3.12)	−2.76 (2.95)
FAD	−9.41 (5.34)	−1.26 (1.22)	−1.13 (1.16)
TDS	−0.51 (0.24)*	−0.11 (0.05)*	−0.14 (0.05)**
Age	−0.13 (0.36)	−0.02 (0.07)	0.04 (0.07)
	Variance		
Variance Explained (R^2)	0.45	0.12	0.19

PSE: Parenting Self-Efficacy, FAD: Family Functioning, TDS: Infant Caregiving Complexity;

*
$p < .05$,

**
$p < .01$,

***
$p < .001$.

[a]
Psychological wellbeing at enrollment used covariate in Parent Health Model.