



The Parent Risk Evaluation and Engagement Model as a Measure for Parent Engagement in the NICU

Nefeli Makris, Dr. Dorothy Vittner, Dr. Jacqueline McGrath
Connecticut Children's Medical Center, Farmington & Hartford

UConn School of Nursing
Fall 2017

INTRODUCTION

On a global scale, an estimated 15 million infants are born prematurely every year.⁸ The National Institute of Child Health and Human Development defines a premature birth as one that takes place before 37 weeks gestation.¹ Responsible for nearly 1 million deaths every year, premature birth is the most common cause of infant death and is the leading determinant of short and long-term infant health problems.² There is a gradient of complications that can arise depending on how prematurely the infant is born. Compared to full term infants, premature infants are at greater risk for neurodevelopment delays, learning impairments, visual disorders, and physical diseases.³ Infants born prematurely are often admitted into the Neonatal Intensive Care Unit (NICU).

Though essential to the progression of premature infant health, the NICU can be a stressful environment for both infants and their parents.⁸ Over the past few decades, a multitude of healthcare interventions have been implemented in the NICU to decrease stress and increase positive outcomes for infants. Such interventions include enhancing parental engagement and skin- to-skin care (SSC).^{7,10} Closely correlated, both methods have shown to drastically decrease infant disease symptoms and simultaneously increase infant growth rates.²

Parent engagement is a compelling research concept in neonatal care that examines the synchronous factors that influence preterm infant health. It is a dynamic process focused on parent experience; specifically targeting the acquisition of skills for problem solving and provision of appropriate infant care based on the infant's needs at a particular time. Through a parent's self-motivation to set goals and to utilize informational resources about the unique care necessary for their child, they can increase their engagement while simultaneously improving the progression of their infant's health.

While some research exists about how mothers become engaged with their infants, there is little research that explores the different parental needs and distinct engagement styles for mothers and fathers. This proposed research study has narrowed in on the scope of parent engagement by examining these details. The central goal of this research was to determine levels of parent engagement with 25 mother-father pairs of preterm infants between the ages of 30-34 6/7 week gestation using the Parent Risk Evaluation and Engagement Model and Instrument (PREEMI).¹

MATERIALS & METHODS

The PREEMI scale was designed to assess parent engagement levels prior to infant discharge and has been previously used with mothers of preterm infants. Since this study will examine both mothers and fathers, we have been able to examine possible gender differences with levels of parent engagement.

The PREEMI instrument is a 45 question survey with a 7 point Likert-type response format to measure parent engagement (1 = never, 7 = always). It focuses on the important skills, knowledge, and readiness needed to practice the appropriate means of care for a premature infant post-discharge. There are a total of five sections in the questionnaire:

Validity and initial reliability have been previously established with mothers of premature infants; no previous studies have examined paternal engagement or looked at differences in engagement between mothers and fathers.

(I) Self-Efficacy; which addresses the parent's ability to act accordingly in response to situational needs and distinguish between an infant's signals to eat, play or sleep.

(II) Social Support; ensures the parent has a larger social circle beyond their intermediate family to help them emotionally.

(III) Outcome Expectations and Intent; measures how well the parent is able to acknowledge the current situation and ensures they are realistic in their expectations of their infant's progression.

(IV) Knowledge; which includes their awareness and education, how to recognize developmental milestones and where they can find reliable resources.

(V) Perception of Risk; which measures how well a parent can foresee the potential risks their infant can face.

Goal:Provide a measure of parental engagement, confidence, and ability to care for their infant.

Participants: Fathers and mothers of premature infants 30-34 6/7 weeks gestation at Connecticut Children's Medical Center in the Hartford and Farmington NICU.

RESULTS

Descriptive Statistics									
	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Error	Statistic	Statistic
Q1	38	2	5	7	234	6.16	.116	.718	.515
Q2	38	6	1	7	215	5.66	.233	1.438	2.060
Q3	38	6	1	7	148	3.89	.296	1.842	3.394
Q4	38	6	1	7	236	6.21	.233	1.436	2.063
Q5	38	6	1	7	219	5.76	.190	1.173	1.375
Q6	38	6	1	7	228	6.00	.173	1.065	1.135
Q7	38	3	4	7	223	5.87	.169	1.044	1.090
Q8	38	3	4	7	220	5.79	.165	1.018	1.036
Q9	38	4	3	7	233	6.13	.142	.875	.766
Q10	38	6	1	7	216	5.76	.186	1.149	1.321
Q11	38	5	2	7	207	5.45	.216	1.329	1.767
Q12	38	5	2	7	238	6.26	.187	1.155	1.334
Q13	38	6	1	7	227	5.97	.205	1.262	1.594
Q14	38	4	3	7	232	6.11	.159	.981	.962
Q15	38	3	4	7	255	6.71	.125	.768	.590
Q16	38	6	1	7	93	2.45	.271	1.672	2.794

Table 1: A descriptive analysis was run to determine the mean, standard deviation and range of each item; a sample of that analysis is included above. Of the 45 items listed in the survey, four items ranked with the highest mean, indicating high confidence or commitment: (1) Parental eagerness to participate in care (mean = 6.95, SD .226), (2) Proper use of a car seat (mean = 7.00, SD .000), (3) Knowledge of Sudden Infant Death Syndrome (mean = 6.87, SD .343) and (4) Knowledge of Shaken Baby Syndrome (mean = 6.92, SD .273).

T-Test

Paired Samples Statistics				
	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Subject	1.50	38	.507	.082
Composite	261.87	38	22.059	3.578

Paired Samples Correlations			
	N	Correlation	Sig.
Pair 1 Subject & Composite	38	-.187	.260

Paired Samples Test							
		Paired Differences					
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		Sig. (2-tailed)
					Lower	Upper	
Pair 1	Subject - Composite	-260.37	22.160	3.595	-267.65	-253.08	.72430

Table 2: A paired T-test was conducted to interpret the PREEMI tool results between mothers and fathers as a composite score. The P-value was 0.000 < 0.05. We can conclude that there is a statistically significant difference between mothers and fathers with regards to parental engagement, confidence and self-management.

SUMMARY

Family-centered care focuses on the fundamental commitment of families in managing the healthcare of their infants. Successful engagement strengthens family-centered care practices and is achieved through the development of trusting relationships and strong communication between the NICU physicians, nurses and parents.

Previous research has shown that mothers of preterm infants are less actively involved with their newborns and often engage in more negative interactions with their infants than do mothers of full-term infants.¹ Using the PREEMI tool may help to identify parents that are at risk for low engagement and when used in a clinical setting will allow clinicians to understand the specific stressors affecting parents.

DISCUSSION

Using the Parent Risk Evaluation and Engagement Model and Instrument as an assessment tool could in the future initiate strategies designed to increase empowerment for parents who are propelled into a sudden and stressful position of learning how to care for a premature infant. Using this instrument to increase communication and clinician understanding will help to break down parental barriers of uncertainties and allow them to find comfort in the chaotic environment of the NICU.

The principles of neonatal health and care will be redefined with this newly emerging study and its influential effects on the relationships between clinicians, parents, and infants. This continuing research will help increase parental engagement screening in clinical settings, encourage patient self-management, discover gender differences in parental engagement and implement a new intervention that specifically monitors parents' preparedness to care for their infant.

The PREEMI instrument will increase parent control and input into the infant's overall health and development. The most effective form of care is practiced when health professionals, patients, and their families maintain strong communication and trust in order to personalize the journey to health and promote lasting improvements in the quality of life for all.

ACKNOWLEDGEMENTS & REFERENCES

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