

Parent Education in the NICU

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BACKGROUND

The Neonatal Intensive Care Unit (NICU) is a specialized environment caring for preterm and medically complex infants that may have low birth weight, congenital malformation or physiologic immaturity. In addition to medical complications and cerebral injury, Pineda et al. (2018) describes the stressful experience of the NICU environment as a factor in shaping infant developmental pathways. Extreme auditory, olfactory, tactile and visual stimuli have the capability of affecting the pre-term infant's physiologic state, therefore negatively impacting the future central nervous system development².

Consequently, Pennell, Whittingham, Boyd, Sanders and Colditz (2012) and Pineda et al. (2018) consider this to be a stressful time for the primary caregiver as well. Advancements in technology and medical services have enhanced survival of smaller and biologically vulnerable infants which has also increased length of stay in a NICU¹. Not only have parents in the NICU been recognized for elevated levels of stress, depression and anxiety², but their infants have been reported to have overall decreased parent-infant interactions and social behaviors¹. This combination of barriers can be detrimental to the vital infant-caregiver relationship².

Occupational therapy can be beneficial in supporting both the pre-term infant and caregiver through facilitation of the caregiver role by providing effective parent education using neuroprotective theory and intervention. Therefore, understanding the effectiveness of current parental education provided in the NICU is necessary to promote parent and caregiver occupation, roles, habits and routines.

PROGRAM DETAILS

Needs Assessment: Action Plan Intervention

- Coordinate with NICU staff for approval of materials
- Develop pictorial reminders for auditory neuroprotection to be placed on NICU pod doors & isolettes
- Develop NICU specific educational materials for parents
- Develop mental health handout
- Create and implement staff survey for follow through of neuroprotective guidelines
- Create and implement combined parental confidence survey & discharge checklist form
- Create and implement parental mental health survey

FOCUSED QUESTION

What is the effectiveness of parent education in the Neonatal Intensive Care Unit in relation to parent occupations, roles, habits and routines?

METHODS

A needs assessment to describe effectiveness of parent education in the NICU was conducted at HonorHealth Scottsdale Shea Medical Center in Scottsdale, Arizona using evidence-based research, interviews, clinical observation and an observational survey. Evidence based research as well as national and state data were collected to support population and environmental descriptions of the NICU setting. Interviews were conducted using pre-made questionnaires with questions adapted for the NICU professionals being interviewed. Three parents, three bedside nurses, one developmental nurse, three therapists and one neonatal nurse practitioner were interviewed. Interviews were transcribed into short answer format and then organized into data tables to demonstrate overlap in responses (Figures 1 & 2). Clinical observation, an observational survey and a journal entry were used to analyze the physical and social environment. Evidence-based research and interview responses were used to identify the socioeconomic and sociopolitical factors in the needs assessment.

Part three of the needs assessment identified targeted outcomes; health behavioral theory, model and frameworks; long and short term parent-centered goals; an action plan and outcome measures. Four targeted outcomes were defined by analyzing current scholarly work in the NICU setting, interview-indicated areas of need, as well as clinical observation. Four theory, model and frameworks were extensively researched and identified based on appropriateness to support selected targeted outcomes. Three long and short term goals were determined with consideration of the current social and physical environment of the HonorHealth NICU and family-focused need. An action plan was then developed to outline appropriate program development and materials to be created. Educational materials created were founded in evidence-based research and were written in parent-directed language to minimize health literacy challenges. Two out of three outcome measurements were independently created after extensive research of current assessment and screening tools in the NICU setting. One outcome measure was modeled and referenced due to lack of accessibility and desire for site-specific need.

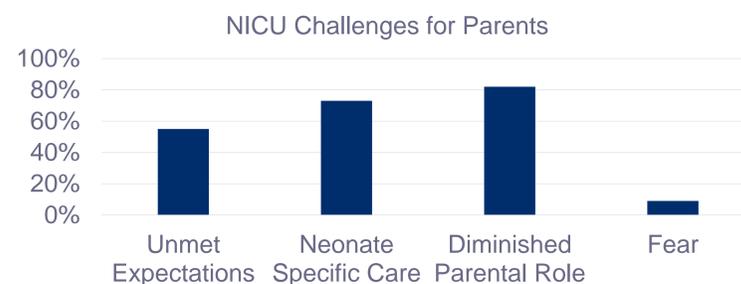


Figure 1. Most significant challenges identified during interviews with healthcare staff & parents in the NICU.

RESULTS

The needs assessment revealed medical and behavioral risk factors including elevated maternal age, parental mental health, neonatal abstinence syndrome (NAS) and parent health literacy. Priority health needs at HonorHealth's NICU were identified as consistent parent education, enhanced NICU specific education, parental mental health support and enhanced empowerment of the parental role. Personal, cultural, beliefs and attitudes of HonorHealth's NICU were positively described and determined to be an invaluable asset of the social environment.

Assets of the physical environment included implementation of neuroprotective guidelines and availability of up-to-date medical equipment for staff and families. Significant barriers of the physical environment observed and reported were the lack of space and privacy at the bedside. A second physical barrier observed and reported despite neuroprotective guidelines in place was intermittent failure to adhere to auditory neuroprotective guidelines from equipment and by healthcare staff. Assets of the social environment included positive staff relationships and perception as well as safety in the NICU. One barrier of the social environment was described as challenging communication during the transition from delivery or cesarean section to the NICU. An additional social environment barrier was consistency in parent education between healthcare staff. A socioeconomic factor important to consider in the NICU is parental health literacy, while an important sociopolitical factor to consider is current maternity and paternity leave legislation in the United States.

Results from the population and environmental description indicated these targeted outcomes were appropriate to address: enhanced auditory neuroprotection, enhanced NICU specific parent education, increased parental mental health support and increased empowerment of the parental role. Development of targeted outcomes were supported by Als' Synactive Theory of Development, the Neonatal Individualized Developmental Care Model (IDC), Model of Co-occupation and the Cognitive-Behavioral Frame of Reference. Three long term and three short term parent-focused goals were identified in combination with an action plan to coordinate with staff and develop educational materials for parents. To demonstrate follow through and effectiveness of the action plan steps and materials, outcome measures included a monthly healthcare survey for auditory neuroprotection, a weekly parental mental health questionnaire and a combined parental confidence survey and discharge checklist that will be completed throughout NICU stay.

Limitations of the needs assessment included moderate diversity in interview questions due to the range of healthcare professions interviewed; time for implementation and assessment of developed program materials; time and higher-level staff involvement to address identified physical barriers of space and privacy; as well as implementation of necessary novel coronavirus safety precautions.

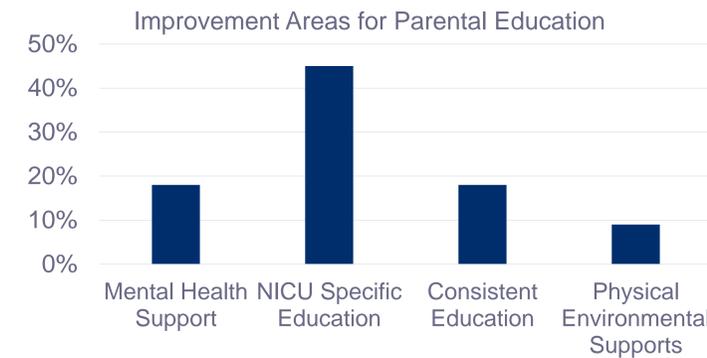


Figure 2. Interview responses from healthcare staff and parents identifying areas of improvement for parental education & support.

BOTTOM LINE FOR OT

- Occupations, roles, habits and routines of new parents in the Neonatal Intensive Care Unit (NICU) are inhibited without effective parental education due to the complex nature of the NICU setting.
- Assessment and intervention of parental mental health in the NICU is necessary to ensure retention and productive use of bedside parent education.
- Empowerment of the parental role in the NICU is beneficial in promoting neurodevelopment of pre-term infants and facilitating the infant-caregiver attachment and bond.
- Implementing consistent parent education of developmentally age-appropriate intervention is necessary to promote neurodevelopment and neuroprotection of the pre-term infant.
- Physical environmental factors should be considered to support the caregiver occupation and role to better promote neuroprotection for infants in the NICU.

REFERENCES

1. Pennell, C., Whittingham, K., Boyd, R., Sanders, M. and Colditz, P. (2012). Prematurity and parental self-efficacy: the pre-term parenting & self-efficacy checklist. *Infant Behavior and Development*, 35(4), 678-688. doi: 10.1016/j.infbeh.2012.07.009
2. Pineda, R., Bender, J., Hall, B., Shabosky, L., Annecca A., and Smith, J. (2018). Parent participation in the neonatal intensive care unit: predictors and relationships to neurobehavior and developmental outcomes. *Early Human Development*, 117, 32-38. doi: 10.1016/j.earlhumdev.2017.12.008