Journal of Neonatal Nursing (2016) 22, 124—137

www.elsevier.com/jneo

A pilot nursing educational intervention promoting an evidence-based transition from gavage to direct breastfeeding in a NICU

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Available online 28 August 2015

KEYWORDS
Evidence-based practice;
Iowa Model;
Preterm infants;
NICU;
Direct breastfeeding;
Transition

Abstract *Aim:* To describe the development and the evaluation of a pilot nursing educational intervention aiming to promote an evidence-based transition from gavage to direct breastfeeding in preterm infants.
Method: The Iowa Model for Evidence-Based Practice to Promote Quality of Care was used as the conceptual framework guiding the development and implementation of the pilot nursing educational intervention in a NICU. Six nurses participated in all of the three workshops of the educational intervention. Their nursing practice, beliefs, and knowledge were assessed pre and post-intervention. Their satisfaction with the educational intervention was also assessed post-intervention.
Results: Post-intervention, nurses reported improved practice, beliefs, and knowledge related to the transition of preterm infants to direct breastfeeding. The educational intervention content has been well received by nurses.

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http://dx.doi.org/10.1016/j.jnn.2015.07.010

Conclusion: A brief nursing educational intervention can improve NICU nurses' practice, beliefs and knowledge regarding the transition of preterm infants from gavage to direct breastfeeding. However, a review of the format of the educational intervention is recommended to refute more efficiently belief and facilitate nurses' recruitment.

Introduction

Scientific literature abounds with human milk benefits for preterm infants. It is known to significantly reduce the occurrence of necrotizing enterocolitis (NEC) and sepsis, to improve feeding tolerance, to accelerate the attainment of full enteral feeding, as well as to decrease the incidence of hospital readmissions after discharge (American Academy of Pediatrics [AAP], 2012). While human milk holds many advantages, direct breastfeeding is considered to be more physiologically suitable for preterm infants, compared to bottle feeding expressed human milk (Buckley and Charles, 2006; Chen et al., 2000). Indeed, many benefits for preterm infants have been reported for direct breastfeeding in the literature, such as an increase in oxygen saturation, a better coordinated sucking-swallowing-breathing pattern, and the absence of apneas and bradycardias during feeding sessions (Buckley and Charles, 2006; Chen et al., 2000).

In spite of all these well-documented advantages, transition to direct breastfeeding in preterm infants remains suboptimal in NICU (Buckley and Charles, 2006; McGrath, 2012; Nyqvist, 2013). Current practices vary among health care providers (Jones, 2012), mainly because of a lack of formal policies to manage transitional feeding issues in preterm infants (Dodrill et al., 2008). Transition practices are also, at times, not evidence-based (Nyqvist, 2013). For instance, the use of volume intake and feeding time to characterize a successful feeding (Ludwig and Waitzman, 2007; McCain, 2003) are among traditional non-evidence based practices in the NICUs (Ludwig and Waitzman, 2007; McCain, 2003; White and Parnell, 2013). The lack of an individualized progression of preterm infants at their own developmental rhythm may then expedite their transition to full oral feedings (White and Parnell, 2013). During this process, gavage feeds are replaced by breastfeeding or bottle feedings until exclusive oral feeding is attained, regardless of the preterm infant's readiness (White and Parnell, 2013). Another practice that is widely used in the NICU is to start the preterm infants on bottle feedings and transition them to the breast only when oral feedings are well tolerated (Nye, 2008). In Siddell and Froman's survey (1994), more than 93% of staff nurses claimed that bottle feedings were started first, versus 6.7% for breast feedings. Almost two decades later, preterm infants are still started on bottle feedings in some NICU and only transitioned to direct breastfeeds after a few successful bottle feedings are achieved (Nye, 2008). These non-evidence based practices contribute to the challenges encountered by preterm infants during their transition to direct breastfeeding.

In addition to the suboptimal transition practices, many beliefs related to the transition to direct breastfeeding still persist among NICU nurses (Black, 2012; Nyqvist, 2005; Nyqvist, 2013). Nyqvist (2013) summarized statements that continue to be made in NICUs regarding preterm infants' breastfeeding and their feeding capacity. These false beliefs include, the inability of preterm infants to coordinate their sucking, swallowing and breathing before 32—34 weeks postmenstrual age (PMA), the need to delay the introduction of non-nutritive sucking until a certain PMA is reached, successful breastfeeding in preterm infants is achieved when they show the same signs at the breast as term infants, as well as the fact that breastfed preterm infants stay longer in the NICU (Nyqvist, 2013). These beliefs that are prevalent in NICUs may delay the transition of preterm infants to breast feeds (Nyqvist, 2013).

While mothers consider healthcare professionals as a keystone for successful breastfeeding (Björk et al., 2012), NICU nurses often lack specific knowledge related to the transition of preterm infants from gavage to direct breastfeeding (Bernaix et al., 2008; Black, 2012; Pineda et al., 2009), especially regarding the benefits and challenges of breastfeeding a preterm infant (Black, 2012). Consequently, mothers of preterm infants do not always receive knowledgeable support to help them transition to direct breast feeds (Buckley and Charles, 2006). As this lack of knowledge may influence the support they offer to preterm infants and their mothers, NICU nurses