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Infant Feeding Beliefs and Day-to-Day Feeding Practices of NICU Nurses

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Breastfeeding is the recommended feeding method for infants (American Academy of Pediatrics, 2012; Association of Women's Health, Obstetrics and Neonatal Nurses, 2015). The unique qualities of breastfeeding/breast milk feeding are especially important for vulnerable infants in the Neonatal Intensive Care Unit (NICU) (American Academy of Pediatrics; Ip et al., 2007). Breast milk provides particular protection against infections (Ip et al. 2007), and necrotizing enterocolitis (Sullivan et al., 2010) and has also been linked to enhanced neurodevelopmental outcomes for these high risk infants (Vohr et al., 2006). In addition, Lucas (2005) has indicated that breast milk feeding has long term consequences that can positively influence cardiovascular, bone, and cognitive function in adulthood. Breastfeeding can also reduce later risk of obesity and diabetes (Ip et al., 2007).

Despite these health outcomes, breastfeeding/breast milk feeding rates are low for NICU infants in the United States (Lee & Gould, 2009; Merewood, Brooks, Bauchner, MacAuley, & Mehta, 2006). Complex maternal, neonatal, staff, and hospital factors influence NICU breastfeeding rates (Lessen & Crivelli-Kovach, 2007; Renfrew et al., 2009). NICU nurses can play significant roles in promoting and supporting breastfeeding, despite the unique challenges facing high risk babies and mothers (Callen & Pinelli, 2005). Indeed, nursing leaders have played critical roles in the promotion of breastfeeding in United States' NICUs (Meier, Patel, Bigger, Rossman, & Engstrom, 2013; Spatz, 2010). Wheeler, Chapman, Johnson, and Langdon (2000) found that nurses positively affected breastfeeding initiation in the NICU by supporting mothers with breastmilk expression and early contact with the breast. Breastfeeding duration has been associated with assistance from NICU nurses (Lessen & Crivelli-Kovach, 2007), although mothers have also reported limited support for breastfeeding by NICU nurses (Cricco-Lizza, 2006). Breastfeeding beliefs, knowledge, and attitudes have been related to breastfeeding support from maternal child health nurses (Bernaix, 2000; Ouyang, Xu, & Zhang, 2012; Spear, 2004). Renfrew et al. (2009) have called for additional research about NICU professionals' views about breastfeeding and

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recommended that studies should investigate their specific beliefs and attitudes as a basis for staff training.

Breastfeeding beliefs do not occur in a vacuum, and a broad scale approach is important to explore the context of infant feeding in the NICU. The current report is part of a larger study that examined multiple contexts for infant feeding for nurses within one NICU. Previous publications from this large investigation have revealed individual, familial, and institutional contexts of infant feeding for these same NICU nurses. These nurses described formula feeding norms during their early years and acknowledged inadequate exposure to breastfeeding during their nursing school education (Cricco-Lizza, 2009a). An additional report delineated the infrastructural and human resource development efforts for breastfeeding promotion in this NICU and found that differences in breastfeeding knowledge and experience among the nurses, formula company marketing, and uneven support from other health professionals served as sources of conflicting breastfeeding messages (Cricco-Lizza, 2009b). An examination of NICU values demonstrated that nurses confronted uncertainty through firm control of care, reliance on technology, and strict time efficiency, but that these values also posed challenges to nursing efforts to promote breastfeeding (Cricco-Lizza, 2011). Furthermore, this demanding work exacted high levels of emotional labor from the NICU nurses which was largely unrecognized (Cricco-Lizza, 2014). It is within these contexts that this current report should be considered.

Exploring how breastfeeding is viewed within the context of the actual bedside feeding practices in the NICU can lead to a more nuanced understanding of the NICU feeding culture. The purpose of this study is to examine the infant feeding beliefs and day-to-day feeding practices of NICU nurses.

Method

An ethnographic approach can capture ideational and material aspects of a culture (Fetterman, 2010). This qualitative design used interviewing and participant observation and allowed for personal interactions embedded within the NICU culture. Over this 14 month investigation, general informants were selected to provide a broad overview of beliefs and practices in the unit. From this group, key informants were followed more extensively to obtain an in-depth view. Both key and general informants were purposively selected for a maximal variety of infant feeding beliefs and practices (Patton, 2015). These informants were observed and formally or informally interviewed to obtain rich details about infant feeding in the NICU. Participant observation facilitated the gathering of information about their actual infant feeding practices while informal and formal interviews allowed for exploration of their specific beliefs. This study was conducted in a level-IV NICU in a free standing, children's hospital in the northeastern United States. The nursing and medical directors granted permission for data collection in this NICU, and the nurses were informed about the study through the intranet, staff meetings, and face-to-face interactions in the NICU. University- and hospital-based human subjects committees allowed ethical approval for this investigation with the stipulation that nurses provide written informed-consent for the formal tape-recorded interviews.

Sample

There were 250 nurses employed in this NICU and they were predominantly White women. In this study, 114 general informants were selected at the bedside based on their varied interactions during infant feeding and nursing care. All but one were women, 96 were White, 9 African American, 8 Asian, and 1 Hispanic. Approximately 30% of the general informants had taken a 16-hour, hospital-developed breastfeeding course.

More detailed demographic information was obtained about the key informants. There were 18 key informants who were selected from the group of 114 general informants. They were identified during participant observation as being knowledgeable and articulate about varied infant feeding beliefs and practices and agreed to in-depth follow-up. Their ages ranged from 22 to 51 with an average age of 33 years. Among this group of key informants, 17 were women, 16 were white and 2 were African American. Eleven key informants were childless and 7 were parents. Two had nursing diplomas, 1 had an associate's degree, 14 had bachelor's degrees and 1 had a master's degree in nursing. They were fairly well divided amongst the hospital's four ascending clinical skill levels from novice nurses to clinical experts. About 50% of these key informants had taken the hospital breastfeeding course and almost 25% were on the NICU breastfeeding committee.

Data Collection

Participant observation—A key part of ethnography is using participant observation to explore everyday life (Pink, 2012). Fieldwork in the NICU was conducted during one or two hour sessions on varying days, times, and shifts over a 14 month period. The sole investigator introduced herself as a nurse researcher and asked the nurses to share their perspectives about infant feeding and nursing care in the NICU. The nurses were observed during their interactions with babies, families, nurses, and other staff throughout the varied activities in the unit. Included in these observations were recurrent infant feedings, routine nursing care, shift reports, committee meetings, and the nurse-run breastfeeding support meetings for parents. The nurse researcher role varied from observation to informal interviewing during the 128 participant observation sessions in this study. These informal interviews were open ended and related to the immediate circumstances of NICU care. The 114 general informants described their beliefs and their day-to-day work in the unit. They were observed/informally interviewed an average of 3.5 times each with a range of 1 to 24 throughout the study. These data were documented in detailed field notes immediately after each session and pseudonyms were used to protect confidentiality.

Interviews—In-depth, responsive interviewing was utilized to gather data about the infant feeding culture in the NICU (Rubin & Rubin, 2012). There was a formal, 1-hour, tape-recorded interview with each of the 18 key informants. These interviews were conducted in a private room near the NICU at specific times chosen by these nurses. They were assured of the confidentiality of their responses to open-ended questions about breastfeeding, formula feeding, and the nature of their nursing care. The nurses were asked to describe their work days and their specific responsibilities for infant feeding. In addition, the nurses were also asked for further explanation about issues that might have arisen during participant observation sessions. Including this formal interview, the key informants were observed/

informally interviewed a total of 3–43 times each with an average of 13.1 interactions per informant. This prolonged contact facilitated a deeper exploration of infant feeding beliefs and practices in this NICU. The interviews were labeled with pseudonyms, and the interviews were transcribed verbatim. These transcripts included the words and behaviors of the nurses during the interviews. They were checked line-by-line for accuracy and compared directly against the recordings.

Data Management, Analysis, and Verification

The field notes from observations, the transcripts from interviews, and regularly composed analytic memos were entered into the QSR NUD*IST computer software program for data management and analysis (Qualitative Solutions Pty Ltd, 1997). Data analyses were conducted alongside data collection in a spiral fashion. Questions raised during analyses were then explored in greater depth in the next interview or observation. The data were reviewed iteratively; codes were inductively derived for meaning, refined and reorganized into categories; and then compared, contrasted and analyzed for patterns (Miles, Huberman & Saldana, 2014). The data were robustly saturated after repeated observations and interviews. The findings were verified through prolonged engagement, member checking, and triangulation of participant observation and interviews (Creswell, 2013). In addition, peer review at the university allowed for oral and written critique of all phases of the research, including findings.

Findings

The findings of this study reflect the infant feeding beliefs and day-to-day practices of nurses in a well staffed, high acuity NICU. These findings will be presented thematically:

Theme 1. The nurses identified health benefits of breastfeeding, but spoke in greater detail and with more emotion about day-to-day challenges of breastfeeding in the NICU.

Theme 2. Formula feeding evoked less emotion, and most nurses viewed it as safe and convenient.

Theme 3. Despite infant feeding challenges in the NICU, nurses who had breastfeeding continuing education and/or some positive experiences with breastfeeding: identified evidence-based breastfeeding benefits for mothers and babies; emphasized the health-based differences between breast milk and formula; and were more committed to working through difficulties with breastfeeding.

Theme 1: The nurses identified health benefits of breastfeeding, but spoke in greater detail and emotion about day-to-day challenges of breastfeeding in the NICU

This theme will be subdivided into three subsections to demonstrate the nurses' beliefs about the health benefits of breastfeeding, their beliefs about the challenges of breastfeeding in the NICU and their identification of the day-to-day practice challenges of breastfeeding in the NICU.

Beliefs about health benefits of breastfeeding—The NICU nurses described several health advantages of breastfeeding. These included: intellectual, nutritional, digestive, anti-infective, and anti-allergenic benefits for babies, along with bonding and empowerment for mothers. For example, one key informant stated,

Well the list goes on and on about the benefits for breastfeeding. You know as far as all the medical benefits that have been noted and then the emotional and psychological benefits as well for the mother. So there are lots of benefits for the mother and lots of benefits for the baby.

In a similar fashion a general informant said, “I think it obviously is a natural way to feed a baby. And it provides the baby with all the nutrients and the immunity protection it needs to live. It also promotes bonding with the mom.” There was variation among the staff as to the strength of their beliefs about these advantages, but consistently the general and key informants agreed that there were many hurdles for breastfeeding in the NICU.

Beliefs about challenges of breastfeeding in the NICU—The NICU nurses spoke in great detail about their beliefs about difficulties with breastfeeding in the unit. A matrix search of their breastfeeding beliefs and expressed emotions revealed the predominance of anxiety, embarrassment, and frustration in the nurses. The general and key informants talked with strong feelings about their concerns for vulnerable babies, anxious mothers, and discomfort of staff, along with the lack of privacy in the NICU environment.

Many informants described breastfeeding difficulties that they associated with the high acuity of illness of babies, maternal/infant separation, and stressed mothers. One key informant expressed a common belief when she said that this NICU had:

very, very sick infants who are requiring resuscitation, who are not eating for a long time and mothers are pumping for a long time ... and basically for parents who want to breastfeed, I would say ... it is very difficult.

Many nurses focused on the “emotional disruption” for mothers of NICU babies. One stated,

If mom is upset and isn’t able to get her milk supply started, or it hasn’t gotten started early on, or is just upset by the whole situation and she isn’t able to sit there with the baby, to put the baby to breast, to have that kind of patience to really be able to bond then yes, absolutely, it is an absolute mess!

Some of the nurses also talked about the challenges of working with adolescent mothers and felt that they were not interested in breastfeeding. One key informant explained that the teens were often “not comfortable with their bodies. They don’t understand the importance of breastfeeding.” She said that it was not uncommon to hear these mothers say, “EWWW that’s disgusting! I’d never do that.” Another key informant stated a popular belief when she said, “Teenagers often think of their breasts as sexual organs and not a nutritional source for babies.”

General and key informants also believed that there were environmental constraints and a lack of privacy for breastfeeding in the NICU. One key informant stated that breastfeeding was “difficult in our environment.” Another one described the NICU setting in this way:

It's a totally miserable, it's just, it's not a comfortable place to breastfeed. You know what I mean; it's very open; we're walking around. We have these screens that fall down and ... if the moms aren't relaxed, it's not going to work.

There was also evidence that reflected discomfort with breastfeeding on the part of some NICU staff members. A key informant reflected a common belief when she said,

There are people who are uncomfortable with women breastfeeding and occasionally some women who are TOO comfortable with it, in my opinion... and I ... am not always comfortable seeing that... I think there should be a healthy balance of modesty attached to the breastfeeding.

Another nurse was clearly embarrassed when she described a mother who continued to pump at the bedside while the doctors made rounds. She said,

Sometimes we have to screen them in. They come from all cultures. Some of them, they throw a blanket. Others— we had a mom who just pumped and she [was] talking to [her] doctors and they [didn't know] what to do with their eyes!

Day-to-day practice challenges of breastfeeding in the NICU—Many nurses emotionally described the multiple responsibilities involved in the care of breastfeeding mothers. These informants spoke about the effort required for breastfeeding education, pumping, breast milk management, feeding of breast milk by bottle, and assistance getting babies to the breast. One nurse stated,

Well if I had the time, then in a perfect world, I would sit down and I would go over all the advantages of breastfeeding as opposed to formula feeding... I think you need like 45 minutes to an hour to sit down and to talk to the mother about it. Because there is so much... information about it... like what it contains and how it helps the baby.

For both breast milk feeding and actual breastfeeding, the general and key informants described numerous responsibilities in their daily practice. In regard to a mother who was feeding breast milk in a bottle, one key informant said that the NICU nurses “provide the mom with a breast pump and kit and make sure she was equipped to pump breast milk.” Another key informant described the unit practice for feeding a baby pumped milk. She said,

You have to do a two RN check if it's breast milk from a bottle ... warming the milk obviously because it's been in the refrigerator, making sure that it's not expired, making sure it's defrosted, not past the expiration date for defrosting, and then doing the actual feeding.

For mothers who were getting their babies to the breast, a key informant described the usual NICU nursing practice in this fashion:

You have to talk to them [mothers] about what they want to do... Make sure that the mom is comfortable and is available... You have to take more time to explain how to use the test weight scale and a lot of times you have to like pause your medications... because in order for mom to get a comfortable feeding position you are occluding the IV temporarily and... that can cause issues... and then follow up

with the weights before and after, educating mom also on how to use the test weight scale.

Other nurses talked about emotionally demanding experiences helping mothers get their babies to the breast. Some confided that they did not feel prepared to offer this assistance and it made them feel uncomfortable. Others felt frustrated with the extra effort. One nurse said, “It took me a good hour and a half to work with that mom one-on-one. To give a bottle takes 15 minutes.” In a similar fashion another key informant said,

I know that sometimes a baby needs to eat to grow and maybe get out of here and mom may be a little bit stressed, so I may not want to do pre and post weights. I might just want to feed him the breast milk in the bottle and think that when she’s home in a more comfortable setting that she’ll probably have better luck at nursing. I have an hour and I’m looking at a mom trying for 30 minutes and then the baby just wants to eat and then we have to n.g. him because he’s used all his energy.

During an observation, a general informant said that she was frustrated after unsuccessfully trying to help a mother to breastfeed. She felt that she had invested so much effort to no avail. She believed that it was easier to bottle feed.

Theme 2: Formula feeding evoked less emotion and most nurses viewed it as safe and convenient in daily practice

The general and key informants acknowledged that formula was “a good alternative” or “a second option” for mothers in the NICU. The NICU nurses were comfortable with formula feeding. One nurse represented many when she said,

We’re fortunate enough to have that alternative. You know it’s obviously not bad for our babies or we wouldn’t be giving it to them. And they are obviously trying to make it as close to breast milk as possible and as soft to the belly.

Another key informant expressed a common sentiment, “Bottle feeding infants do fine.” The nurses valued technology in their daily work and this carried over into infant feeding. Another informant stated, “Sometimes I think in this day and age with all the technology for formula creation, that there’s nothing wrong with giving formula.”

Nurses also noted the ease of formula feeding during daily care. When asked about their everyday practices for formula feeding, one nurse summed up the common sentiment of the general and key informants in this way, “Formula- pretty much you crack the seal and stick a nipple on it, and you are good to go- so in that respect, it’s easier.” In some cases, nurses felt that formula feeding was less risky than breastfeeding. One key informant said that formula “definitely has less human risk of carrying any kind of disease.” Similarly, another NICU nurse said,

We have to do a two RN check [for breast milk] and that’s okay, but isn’t it easier to get that [formula] bottle? No one asks for a two RN check for formula. You know what I mean?... It’s not someone’s secretions [from] their body so we don’t really check as much. You know, I think the bottle is easier.

A few other NICU nurses offered the same viewpoint. One of them said, “We really have grown, but there is still a sense that breast milk is like yucky stuff, you know, when you’re dealing with somebody’s body fluid, and that formula somehow is cleaner.” In a unit where nurses were markedly vigilant about infection control and safety, there existed some distrust about exactly what was in mother’s milk. There were some nurses who were concerned with medications in breast milk and they verbalized unease about the safety of the infant. One key informant said, “Where there is a mother taking certain medications and there is a fear that it will cross over then and harm the baby then absolutely no way, then absolutely formula first.” Another informant also said that she knows that there was a readily available reference textbook in the unit to check for compatibility of varied medications with breastfeeding, but that she did not believe in it. She said, “What the mother takes, the baby gets” and she did not think that it was safe to use breast milk when the mother was taking medications.

Theme 3: Despite infant feeding challenges in the NICU, nurses who had breastfeeding continuing education and/or some positive experiences with breastfeeding: identified evidence-based breastfeeding benefits for mothers and babies; emphasized the health-based differences between breastfeeding and formula; and were committed to working through difficulties with breastfeeding

The general and key informants revealed that this children’s hospital required all new NICU nurse employees to take a 16-hour breastfeeding course. For previously hired NICU nurses, this course was optional. The informants identified that approximately 45 out of the 250 NICU nurses had completed the course and they, along with lactation consultants, served as breastfeeding resources in this NICU.

As reflected in the first part of this third theme, nurses who had continuing education about breastfeeding and/or some positive personal/familial breastfeeding experiences identified evidence-based breastfeeding benefits for mothers and babies. These nurses were the most enthusiastic about breastfeeding during their day-to-day practices in the unit. For example, one general informant who had taken the breastfeeding course was observed during her care for an unstable premature baby. When the adolescent mother came to visit, this nurse took the time to listen to this mother’s concerns and spoke with her about the evidence-based benefits of breastfeeding. Later, the nurse was observed encouraging and praising the mother for her initial attempts at breast pumping.

Another key informant identified multiple advantages of breastfeeding and further explained how she supported breastfeeding in her daily practice in the NICU. She cited the importance of the breastfeeding course and her positive personal experiences for her beliefs and intended to breastfeed her own children in the future. She stated, “When I have a kid, I wouldn’t do it [formula feed] because I took the breastfeeding course or just mainly growing up- like my parents breastfed me... To me the best thing ... is breast milk.” Other nurses talked in animated terms about the evidence-based benefits of breastfeeding for NICU babies. One said, “I think it’s incredible, specifically for our population here. They are so immuno-compromised that they can use ANYTHING to help them get through this whole

course here in the hospital.” She identified the unique qualities of breast milk, but noted that not all NICU nurses understood this. She said,

You know immunological properties of the breast milk are really important ... Our kids can hardly eat and so when they do, if we can give them something easily digestible, that’s made specifically for them, I mean to me, it’s just probably the most important thing that we’re able to do for our babies, but we just don’t all recognize that yet.

Secondly, those nurses who had completed the breastfeeding course and/or had positive experiences with breastfeeding emphasized the health-based differences between formula and breastfeeding. In particular, they not only acknowledged the benefits to breastfeeding, but clearly identified specific differences between breastfeeding and formula. One stated, “The benefits of breast milk just so far outweigh what formula is.” Another believed that formula “definitely was not nutritionally as good [as] the baby doesn’t get the antibodies ... white blood cells and stuff that they would get from the mom.”

Finally, the nurses who had completed the breastfeeding continuing education and/or had affirming personal experiences were more committed to working through difficulties with breastfeeding in the NICU. One key informant said, “But I also understand the benefits [of breastfeeding] so it kind of makes it like we want to do this. We want to promote this as much as possible. It’s definitely a lot more work.” These nurses were more attuned to checking with the mother about her milk production during the time before oral feedings were started. One said,

I mean if the baby’s predominantly getting breast milk, which you want the baby to get because it is SO good for the baby, then you have to make sure that it’s actually coming in. So kind of neglecting that, is neglecting the baby.

These nurses accepted that while breast milk feeding and breastfeeding were time intensive, they believed that this time was a good investment for their efforts. One key informant acknowledged the many daily demands of NICU nursing, but was committed to breastfeeding promotion because “it’s something that’s worth it.”

Support for this third theme was further strengthened by parallel assessment of the nurses who had no continuing education about breastfeeding and/or no positive personal experiences. These nurses tended to view care of breastfeeding mothers in this way: “It was just awkward for me because I hadn’t really done it as a nurse or as a parent... I’m still not incredibly comfortable with it because I don’t feel very proficient.” These same nurses did not indicate any interest in learning these skills and were not inclined to take the breastfeeding course. Participant observation revealed that these nurses often overlooked opportunities for the promotion of breastfeeding and skin-to-skin care in the NICU. One general informant said that some nurses would give the mothers a defrosted bottle of milk instead of encouraging the initiation of breastfeeding. This was witnessed at the bedside during several participant observation sessions. In addition, the change of shift report frequently demonstrated that communication about pumping, transition to the breast, and breastmilk availability was inconsistent. In some cases, the nurses would substitute formula rather than call the mother to check with her. One general informant said that breastfeeding

promotion was “not on the radar screen” of all of the NICU nurses. The nurses who did not take the breastfeeding course generally did not acknowledge differences between breastfeeding and formula feeding. For example, one of these nurses said that she formula fed her own babies and “There was no difference in their health.” These nurses generally relied on their own past experiences rather than the science of lactation.

Discussion

The Association of Women’s Health, Obstetrics and Neonatal Nurses (2015) recommends that nurses should encourage and support breast milk feeding/breastfeeding for vulnerable and premature infants. This ethnographic study explored NICU nurses’ infant feeding beliefs and the day-to-day feeding practices at the bedside. Most of the nurses identified health advantages of breastfeeding for mothers and babies, but the strength of these beliefs varied among the staff. Like Bernaix (2000), this study found that nurses’ experiences and education influenced their beliefs about breastfeeding. Similar to Spear (2004), some of the NICU nurses had limited understanding of the differences between breast milk and formula. In Spear’s study, NICU nurses had lower mean breastfeeding knowledge and attitude scores than other maternal child health nurses. Spear asked one open ended question about breastfeeding beliefs and found that the nurses generally supported breastfeeding. The strength of this current study is that it explored breastfeeding beliefs in depth. It contributes uniquely to the literature by contextualizing these beliefs within the day-to-day feeding practices at the bedside. The NICU nurses in the current study believed that breast milk feeding and breastfeeding were more difficult than formula feeding during their daily work on the unit. This study identified and detailed their perceived challenges related to acutely ill infants, anxious parents, maternal/baby separation, privacy concerns, staff discomfort, and environmental and daily practice constraints. The nurses voiced feelings of anxiety, embarrassment, and frustration when dealing with these challenges to breast feeding promotion. In contrast, formula feeding evoked less emotion and was viewed as safe, efficient, and convenient in day-to-day feeding.

These beliefs raise questions about nurses’ potential impact on NICU mothers and babies. Mothers have reported that NICU breastfeeding support varied among individual nurses and felt that these nurses’ conflicting advice continued to negatively affect them and their sense of motherhood after discharge (Niela-Vilen, Axelin, Melender, Salantera, 2014). In contrast, Miracle, Meier, and Bennett (2004) reported that NICU nurses’ attitudes and beliefs positively influenced infant feeding decisions of NICU mothers. These mothers reported that the NICU staff had clearly emphasized the differences between breast milk and formula and the mothers identified that these differences were the most important factor in their decision to provide breast milk for their infants. The varying beliefs of the nurses in this current study could serve as a source of inconsistency in breastfeeding promotion for NICU families.

While the nurses in the present study generally referred to breastfeeding as beneficial for high-risk infants, not all of them recognized that there were evidence-based differences between formula and breast milk. Those who had positive past experiences with breastfeeding and/or had taken the hospital-sponsored breastfeeding course recognized the differences and believed that it was worth the extra effort to promote breastfeeding. Those

nurses without positive breastfeeding experiences and education often resorted to the convenience of formula feeding. Taylor, Gribble, Sheehan, Smith, and Dykes (2011) reported that NICU nurses also talked about the hard work of breastfeeding promotion and used formula for convenience; however the nurses in that study experienced staff shortages and high workloads. The nurses in the current study had generous staffing and material resources to support breastfeeding, but they also had a very high acuity level and the cultural milieu might have been different (Cricco-Lizza, 2009b). In this Level-IV NICU the nurses valued tight control of actions, reliance on technology, and maximal efficiency in use of time, and breastfeeding promotion had an uneven fit with these cultural values (Cricco-Lizza, 2011). Similar to Niela-Vilen et al., (2014), the nurses in the current study emphasized the technical aspects of breast milk feeding but the emotional aspects of breastfeeding were not often prioritized. Modes of infant feeding were emotionally laden for the nurses in this acute work environment, which already demanded high levels of emotional labor from them (Cricco-Lizza, 2014). As a result, there were varying levels of commitment to breastfeeding during daily care practices which led to missed opportunities for breastfeeding support at the bedside.

Bernaix, Schmidt, Arrizola, Iovinelli, and Medina-Poelinez (2008) found that NICU nurses' lactation knowledge, attitudes and beliefs improved after an educational intervention. Not all of the NICU nurses in this current study had completed the breastfeeding course offered by this hospital, and this was reflected in the different ways that they talked about and supported breastfeeding and formula feeding at the bedside. Mandatory training using standards from the Baby Friendly Hospital Initiative (BFHI) has led to increased breastfeeding rates and positive changes in staff attitudes, knowledge, and confidence in breastfeeding support (Ingram, Johnson, & Condon, 2011). However, the BFHI ten steps were not specifically written for NICUs (World Health Organization/United Nations Children's Fund, 1992). The current study demonstrates the need for further research to determine the best practice guidelines in NICU settings. The development of specialized staff education should be geared to overcoming the unique hurdles in everyday practice. This education should not be optional for NICU nurses.

Implications for Nursing

NICUs have exceptional challenges in the promotion of breastfeeding and this current study offered insight into the nurses' perspectives. Their concerns are important to address. Meier et al. (2013) have called for a move to evidence-based care for breastfeeding promotion in the NICU. They emphasized the need for more rationality and less emotion. Establishing clear NICU standards will help to make this shift, but this current study demonstrates that emotional responses are still a considerable barrier to this process. These findings clearly call out for educational programs that directly address these emotions. Matthew-Maich, Ploeg, Jack, and Dobbins (2012) found that front line leaders who focused on individual breastfeeding attitudes and beliefs facilitated the staff uptake of breastfeeding best practice guidelines. Renfrew et al. (2009) recommended the use of a psychological/behavioral model to guide training programs for implementing evidence-based practice for breastfeeding promotion. By consensus, Michi et al. (2005) identified 12 behavioral domains that are important for change processes. These domains could be useful in a broad-based change

process for NICU breastfeeding training. They would allow for attention to personal beliefs and attitudes. Critical reflection about these factors would help the nurses explore their emotions related to breastfeeding and could be used to address the challenges to evidence-based practice that were identified in the current study.

Conclusion

Novel strategies are needed to overcome challenges to breastfeeding promotion in the NICU. Vulnerable NICU babies and mothers need their nurses to be clinically prepared to support, promote, and protect breastfeeding at the bedside. The nurses in this study identified that they felt anxious, frustrated, or embarrassed with the challenges of breastfeeding in the NICU. This research demonstrates that both the emotional and educational needs of the NICU staff nurses must be addressed before they can feel competent and comfortable with the promotion and support of breastfeeding. A limitation of this study is that it was conducted on a high intensity NICU that was well staffed. More exploration is needed in lower intensity and less well staffed units.

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Highlights

Breastfeeding was viewed as more effort than formula feeding in daily practice.

Breastfeeding evoked emotions of anxiety, embarrassment, and frustration in NICU nurses.

Nurses with breastfeeding training were more committed to breastfeeding promotion.

Mandatory breastfeeding training should address emotional and educational needs of nurses.