Clinging to closeness: The parental view on developing a close bond with their infants in a NICU

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Highlights

- Infant's NICU stay provided an emotional rollercoaster ride to the parents.
- Moments together as a family in the NICU represented normal parenthood.
- Infant's reciprocal behaviour was significant to parents' closeness experiences.
- Stored closeness sustained parents through the unavoidable separation.

Clinging to closeness: The parental view on developing a close bond with their infants in a NICU

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Abstract

Objective: To identify and understand how parents develop a close bond to their infants in the neonatal intensive care unit (NICU).

Design: A qualitative descriptive study; closeness and separation stories recorded in a smartphone application by the parents were analyzed using thematic analysis.

Setting and participants: Twenty-three parents of nineteen infants who were taken care of in a level III NICU in Finland.

Findings: Bonding moments and a disrupted dyadic parent-infant relationship continuously alternated as in a rollercoaster ride during the hospital stay. Transitions from closeness to

separation and vice versa were the most emotional stages on the journey. Parents had a natural desire to be close and create a bond with their infants, however, they accepted the separation as part of NICU care.

Key conclusions: The findings indicate that closeness with their infant was the power that parents stored and that led them through unavoidable separation to normal parenthood.

Implications for practice: Bonding and attachment will occur naturally if parents are close to their infants and permitted privacy and time with their infants. NICU staff should create a peaceful and calming environment that enables and supports this bonding process.

Keywords

closeness; infant; NICU; parents; separation

Introduction

Parental bonding with an infant develops slowly through interactions during the pregnancy, birth and early hours, days and months of an infant's life (Lothian, 1999). It is supposed to develop naturally in the process of being together (Klaus et al., 1972), interacting and getting to know each other (Lothian, 1999). Being physically close to the mother is the most natural environment for a newborn infant immediately after birth. Early physical contact promotes infants' physiological stability, reduces crying and promotes breastfeeding (Moore et al., 2016). Close contact between a mother and her infant is crucial for this early bond to develop into a secure parent-infant relationship (Mercer, 2004) which is important for infant cognitive, motor and social development during hospitalization and beyond (Flacking et al., 2012). Closeness also shortens the length of hospital stay, relieves parental stress and enhances the parent-infant relationship in the NICU (Flacking et al., 2012; Anderzén-Carlsson et al., 2014).

The natural bonding process is threatened when an infant is born preterm or sick and needs intensive care (Davis et al., 2003). Despite systematic changes in the NICU care culture towards a family-centred care approach in which parents are involved in an infant's care (Mikkelsen & Frederiksen, 2011), intensive care still creates challenges to parent-infant closeness (Flacking et al. 2012; Feeley et al., 2016). Parents, both mothers and fathers, find hospitalization difficult and they experience stress, uncertainty, yearning and fear (Wigert et al., 2006; Lindberg and Öhrling, 2008; Obeidat et al., 2009). The level of distress is higher among mothers than fathers but both parents experience sadness and anxiety (Geetanji et al., 2012) Mothers are particularly susceptible to feelings of guilt about their infants' prematurity (Heidari et al., 2013). Separation from an infant is the most difficult aspect for both parents during their infant's NICU stay (Wigert et al., 2006; Lindberg and Öhrling, 2008; Obeidat et al., 2009; Sikorova and Kucova, 2012; Aliabadi et al., 2014) but mothers carry these unpleasant memories with them long after discharge (Wigert et al.,

2006). Although the emphasis on early bonding is on the mother-infant dyad, a father's involvement in providing closeness to the infant, for example via skin-to-skin contact, also has positive impact on a father's parental role attainment (Shorey et al., 2016) and enables a father to feel like a real parent (Sisson et al., 2015). Most importantly, separation has long-term health consequences such as developmental problems for infants, parental depression and insecurity in parenting (Flacking et al., 2012).

Parent-infant closeness and bonding in the NICU occurs through a three-way interaction – infant, parent and nurse (Fenwick et al., 2008). During the NICU stay, parents need help, support and encouragement from staff to form a relationship with their infants (Flacking et al., 2016). It is important to consider the father as an equal parent (Sisson et al., 2015) however, fathers may sometimes need encouragement from the staff to continue their involvement (Feeley et al., 2012; Baylis et al., 2014). Changes in NICU design from open bays to single family rooms have increased maternal satisfaction and involvement in the care of infants (Lester et al., 2014). Usually, staff strives to support closeness and minimize situations that cause separation in many ways (Feeley et al., 2016); however, parents have reported differences in staff's views on how they encourage closeness with infants (Blomqvist et al., 2013). Most of the factors such as treatments or procedures causing separation are not controlled by the parents (Feeley et al., 2016). It is important to identify situations and nursing approaches that help parents feel close and help them to develop a relationship with their infants. With this knowledge, it will be possible to further enhance closeness and avoid separation to better support parent-infant bonding in the NICU environment. The aim of this study was to understand how parents develop a close bond to their infants in the NICU environment.

Methods

A qualitative descriptive study design was used to understand parents' perspectives on closeness and separation between them and their preterm or sick infants. Parents recorded stories about their experiences with the Handy Application to Promote Preterm infant happY –life (HAPPY) smartphone application (Niela-Vilen et al., 2017) from December 2014 to May 2015.

Setting and participants

The study unit was a level III NICU (American Academy of Pediatrics, 2012) with 18 beds and 600 yearly admissions in Finland. The unit has ten single family rooms and three open bays with a total of seven beds. The unit is open to parents 24/7 and parents are encouraged to participate in medical rounds. The Close Collaboration with Parents Training Program, which fosters the

implementation of family-centered care, was provided to NICU staff including midwives, registered nurses, physicians, and physiotherapists from 2009 to June 2012 (Axelin et al., 2014).

A convenience sample of mothers and fathers of NICU infants was recruited. We included parents who 1) were able to read Finnish, and 2) provided informed consent. Parents were excluded if 1) they were not caring for the infant after hospital discharge (e.g., foster placement) or 2) the infant's condition was critical according to the medical staff (unstable and may result in death), or 3) the infant had a major congenital anomaly. Mothers' perspectives are more prominent in the findings since we faced difficulties recruiting fathers. Fathers were more difficult to recruit, because they were not present as often as mothers in the NICU. Altogether 49 parents were approached for the study participation and 26 parents (22 mothers and 4 fathers) refused to participate. The most common reasons for refusals were a wish to focus only on the infant, not to anything additional such as research and unfamiliarity with the data collection method. The sample size was determined by data saturation. Thus, data collection continued until there were no new subthemes of closeness and separation factors emerging from the parents' stories.

Data collection

Parents were recruited by the female researcher, who provided parents with verbal and written information about the study. The researcher was not associated with the hospital where the data were collected. Parents were asked to use the HAPPY application to record their experiences for one day during the time they spent in the NICU. The smartphone with the HAPPY application was given to parents when they first arrived to the NICU on the day they had chosen for data collection. The researcher provided verbal and written instructions of how to use the HAPPY application. Parents were asked to record experiences about events they considered to be closeness or separation between them and their infants. Parents opened the application and chose whether the event was closeness or separation by clicking the buttons labelled "closeness" or "separation". After choosing the event, parents dictated their story and described where they were, what had happened and what thoughts they had about the event. If parents were unable to record their thoughts at that exact moment, then they could quickly insert a bookmark. At the appropriate time, they could return to the bookmarks and record their stories afterwards.

After 24 hours, the smartphone was returned to the researcher. When the smartphone was returned, parents were asked to complete a questionnaire including questions about their background characteristics (e.g., age, previous children and daily presence in the NICU) and infant characteristics (e.g., gestational age, birth weight and care requirements). Recorded stories were downloaded to the study computer and the recordings were deleted from the phone before it was given to a next participant.

Data analysis

The recorded stories were analyzed using inductive thematic analysis (Braun and Clarke 2006). The analysis began by transcribing audio recordings verbatim by the first author who at the same time was familiarizing herself with the data. During this process, the initial ideas about the overarching themes were noted. The transcripts were labelled with an ID number and then downloaded to QSR NVivo 10 software for analysis. The transcripts were coded by the first author with NVivo and as the process continued the codes were reviewed and potential themes were identified (e.g., calming closeness and unavoidable separation). To ensure the trustworthiness of the analysis, the other members of the research team (XX and XXX) familiarized themselves with the data and the codes. Based on the discussions within the research team, the potential themes and subthemes were reviewed and revised; in addition a thematic map was created. After a critical review of the thematic map, the final themes and subthemes were determined precisely, defined and named.

Ethical considerations

The study protocol had a favourable statement by the Ethical Committee of the Hospital District of Southwest Finland (131/1802/2014) and was approved by the hospital administration. After verbal and written information was provided and any questions answered, written informed consent was obtained from each participant.

Findings

Participant demographics and recordings

Altogether 23 parents (mothers n = 18, fathers n = 5) of 19 infants participated in the study. Study participants made 141 recordings with the HAPPY application. The average number of entries per parent was six ranging from one to 21. Parents classified 92 (65%) events as closeness and 49 (35%) as separation. There were few differences between mothers and fathers therefore the participants are usually referred as ´parents´ in our description of the findings. However, the few minor differences found are described.

The median age of the parents was 32 years old ranging from 27 to 42 years old and 59% of them had their first child. The infants' median gestational age was 32.5 weeks ranging from 26 to 41 weeks The infants' birth weights varied from 390 to 4540 grams, while the median was 1980 grams. On the study day, the median postnatal age of the infants was 8 days and all but one infant had been transferred to the NICU directly from the birthing room. All participating parents visited

the NICU daily and spent an average of 9.7 hours on site mostly during the daytime. Only two parents slept nights in the unit. The characteristics of the parents and infants are shown in Table 1.

Rollercoaster of closeness and separation

As a major identified theme, the parents described their NICU experience as a rollercoaster of closeness and separation from their infants. In this journey, parents clung to closeness which enabled them to develop a bond with the infant. The separation experiences, in turn, disrupted the development of dyadic relationship between a parent and an infant. The transitions from closeness to separation and vice versa were loaded with strong emotions and guided the development of parenthood. The major theme and subthemes are illustrated in Figure 1.

In the NICU, parents were immediately thrown into a rollercoaster of closeness and separation. They rarely had time to be prepared for the ride of being a parent of a preterm or sick infant. The disruption in the dyadic relationship with their infant was an unexpected situation. Under these circumstances, parents tried to cope with the continuously alternating periods of closeness and separation. They actively worked to bond and get connected to their infants; however, for this they needed help from the staff. Simultaneously they desired opportunities to be together as a family in private. The downhills of the rollercoaster ride caused by the NICU environment, such as the infants' compromised health and routine care, unavoidably disrupted the dyadic relationship between parent and infant. Parents prepared for separations by spending as much time as possible close to the infants. As a coping strategy they tried to store emotional resources to be prepared for upcoming separations and to be able to cope with these. Despite these preparations, moments of leaving the NICU were difficult for parents to cope with. Consequently, the moments of returning to the NICU were very emotional and parents felt a strong bond with their infants during those reunions.

In addition to the ups and downs during their journey, parents' feelings appeared with differing intensity, from a deep feeling of togetherness to a less intensive feeling of being present and from a deep yearning to a mild feeling of unpleasantness. The emotions related to the rollercoaster ride varied from great joy, calmness and happiness to worry about the infant's well-being and especially mothers expressed sometimes even a fear of losing the infant. It is notable that the mothers used stronger and more colorful expressions than fathers when describing their emotions. Parents feelings did not necessarily depend on the degree of physical closeness: distance from the infant was not necessarily a separation experience. Conversely, mothers described that being physically near their infants did not always make them feel close. Despite all the mixed emotions, parents felt fortunate to have an opportunity to be a parent and to be part of their infants' lives.

Bonding moments

The biological need of both mothers and fathers was to be close to the infants and take care of their needs. The parents spent a lot of time each day in the NICU. In addition to presence, parents desired to be physically close to their infants. Physical touch played a major role in parents' closeness experiences and this varied from skin-to-skin contact to holding, or merely stroking the infant with their finger. To obtain an uphill ride on their rollercoaster experience and feel close and connected to their infant, physical contact was not a necessity. At times, it was sufficient to see the infant and be available in case the infant would need parental care, protection or comfort. Parents cherished the moments they could be alone with their infants, without any disturbance, and experience a feeling of normal parenthood. This was important especially to fathers, who all experienced closeness on moments together with infant and mother. Sometimes even the presence of relatives visiting in the NICU inhibited their feelings of closeness.

"I'm in the family room, on the armchair and I have my girl in skin-to-skin contact under my sweater. I feel very close, because she is so calm and she smells so good and milk has started to flow. It is good to be here." ID7 (mother)

"I am here in my son's room. When I arrived, I felt very strong feelings of closeness when I saw my son sleeping safely under the sheets and his mother at his bedside. It was very nice to come." ID5 (father)

To provide daily care gave the parents a feeling of normality in this unexpected and abnormal situation. According to them it was an important part of developing the relationship with their infants. Nurturing the infants by changing diapers, feeding or getting the infants to sleep performed on every parent's experiences and made the parents feel that their infant was their own. The mothers developed a connection to their infants also by expressing breast milk close to the infants. The increased milk secretion was a concrete sign of connection. Providing their own breast milk to the infants was especially important when they did not have a possibility to breastfeed. For fathers feeding their infant from a bottle or through nasogastric tube gave them a feeling of closeness.

"I was able to change his diaper and participate in his care. He feels more like my own baby when I can take part in his care." ID11 (mother)

Parent-infant interaction had a central role in seeking and developing the bond. A set of parents often felt a connection to their infant immediately when arriving in the infant's room and seeing him/her. When the feeling was less intense, parents actively worked to interact with their infant. Admiring, talking and singing to the infant supported the parents' sense of connection. Reciprocity,

like eye contact with the infant, hearing the infant's vocalization, the infant squeezing parent's finger or calming down with parents' touch, was a significant contributor to the developing bond with the infant. In addition to reciprocal interaction, the mothers observed positive signs concerning the infant's well-being such as growth and development and that strengthened their bond. These signs helped mothers in particular to trust that the infant would survive and go home, which encouraged them to bond further with the infant.

Instead of providing all the care the infants needed in challenging situations, parents were only a part of their infants' lives and care. In the parents' stories, the support from nursing staff did not interfere with their relationship with the infants. Trust in staff members was also an important means for the parents to ensure that their babies were safe and taken good care of while they were not able to be present themselves.

"My husband is coming to take me home. I would like to stay, but we are coming back together in the evening. I suppose the baby will be fine… it feels safe that he stays here." ID16 (mother)

Growing parenthood and experiencing close moments gave the parents the strength to carry on in the challenging situation. These moments engendered positive feelings and parents felt calm and relaxed. The developing bond helped parents to adhere and connect to their infants and gave them a feeling of normal parenthood.

Disrupted dyadic relationship

Both mothers and fathers experienced separation when they were physically distant from their infant and leaving an infant's side felt unnatural and it made parents feel guilty. Some mothers felt they were a bad parent when leaving their infant. Different factors and events disrupted the development and maintenance of the dyadic parent-infant relationship, such as separations, the hectic NICU environment, the organization of maternal care, care routines in the NICU or parents' responsibilities outside the hospital. Most of these factors were beyond parents' control.

"It is somehow unnatural to leave your newborn baby to someone else to care and go away yourself, but in this case it is part of this situation and I need to accept it." ID 17 (mother)

Physical distance was the most common cause for parent-infant separation, even within the hospital, when the distance or time of separation was brief. It was also more difficult for the parents to leave an infant's side if she/he was awake and ready for interaction – a sleeping infant was easier to leave. Even though parents considered that separation from the infant was unavoidable in

their situation, it triggered annoyance and sadness. Some mothers also noted physical effects like a decrease in the volume of expressed breast milk.

"I needed to leave. I feel bad because I would not have wanted to go before my son would fall asleep… I am happy that the nurse stayed with him." ID18 (mother)

At the study site, maternity care was organized so that the newly delivered mothers were cared for in another ward and they could not stay in the NICU. This physical separation complicated the formation of a bond between mother and infant after the birth. Although parents had a bed next to their infant's incubator they often went home to sleep over night for their own well-being, to take care of other family members and obtain a better sleep.

The dyadic relationship was sometimes disrupted even when the parents were in close proximity to their infants. Other responsibilities prevented parents from focusing on parenthood. Mothers described feelings of being occupied with personal appointments with physiotherapists or social workers disturbed their focus on their infants and made them feel separated from their infants even though they thought these appointments were important. Spending time with the older siblings at home created conflicting feelings because the parents continuously felt they were neglecting one of their children.

"I'm in my baby's room in the NICU, but despite being in the same room, I'm not able to be completely present. I feel the same feeling of hurry I felt in the morning. There has been a lot of different kinds of action here today." ID11 (mother)

"I put my baby back in his cot. I need to leave to go home to see my other children. I feel really bad leaving." ID 22 (father)

Sometimes the hospital care routines prevented parents from doing things totally independently or based on their infants' individual needs. Infants' treatments such as phototherapy or their critical condition disrupted the connection because the infants needed to stay in the incubators or cots and were isolated from the parents. The parents wished to be closer to their infants or hold them, but it was not possible because of the infants' well-being. In addition, changes in the intensity of closeness from skin-to-skin contact to less intensive physical contact with the infants made the parents feel separated. The feeling was more intense if the end of close moment was due to a threat to an infant's well-being such as a desaturation or bradycardia event.

Even though providing daily care to the infants supported the parent-infant connection, sometimes it disrupted the connection (e.g., unsuccessful or painful breastfeeding). In the demanding situation of being the mother of a sick infant, normal difficulties during the initiation of breastfeeding were too much to cope with.

"I breastfeed my baby from my sore breast with a nipple shield … because of the pain in my nipple the baby feels distant and I try immerse to my thoughts and not to feel pain. That alienates me even more… I realize I don't feel breastfeeding as closeness with my baby, but rather as a duty." ID18 (mother)

The parents were working to get to know and connect with the infants to form a dyadic relationship with their infants in the extraordinary situation and environment. Since parents did not have control over the external factors disrupting the dyadic relationship with their infants, they tried to adapt to or cope with them. Both mothers and fathers tried to store emotional resources experienced during physical closeness to prepare for upcoming separation. The mothers described emotional distance with the infant regardless of physical closeness. Feeling separation when physically close to an infant may serve as a coping strategy in an emotionally burdening situation. The mothers also dreamed of the future at home with baby and sought consolation by remembering past bonding moments with the infant or by planning the next close moments with the infants – the next uphill section of the rollercoaster.

Discussion

This study aimed to understand how parents develop a close bond with their infants in the NICU environment. The study provided unique knowledge about closeness and separation from the perspective of parents using data collected with a smartphone application. The encompassing theme throughout parents' closeness and separation experiences was their basic desire to be close and create a bond with their infants. Bonding moments and disruption in the parent-infant dyad continuously alternated during this journey as in a rollercoaster ride. During this journey, closeness with their infants was the power that parents stored and that sustained them through the unavoidable separation to normal parenthood. For the most part, the experiences of mothers and fathers overlapped, but only mothers described feeling separated when physically close to the infant and breastfeeding as a source of both closeness and separation.

Parent-infant closeness in the NICU environment was experienced as natural and normal and it was actively pursued by both mothers and fathers. Closeness with their infants helped parents feel like "real" mothers or fathers, which is not always obvious to a parent of a preterm infant (Finlayson

et al., 2014). Strong evidence shows that holding (Wigert et al., 2006; Fenwick et al., 2008; Lindberg and Öhrling 2008) and skin-to-skin contact (Blomqvist et al., 2013; Anderzén-Carlsson et al., 2014) support parenthood and the process of bonding. The importance of participation in infant care for experiencing closeness was also evident in previous studies (Lindberg and Öhrling 2008; Sikorova and Kucova 2012; Russell et al., 2014; Flacking et al., 2016). Nursing staff need to encourage and provide guidance equally to both mothers and fathers, allow them to make care decisions and let them be responsible for daily care. Concrete participation enhances parent-infant relationship (Flacking et al., 2012; Anderzén-Carlsson et al., 2014) and supports a mother's connection with her infant (Fenwick et al., 2008) and fathers involvement in caregiving (Feeley et al., 2012).

Parent-infant bonding was not always dependent on physical closeness such as holding or skin-to-skin contact. Arriving in the NICU in the morning, for example, was a very emotional moment and experienced strongly as closeness. Spending time in the NICU and watching their infants was an important part of the bonding process as reported previously (Lindberd and Öhrling, 2008; Aliabadi et al., 2014; Russell et al., 2014). Parental bonding was especially enhanced if an infant reacted to parent's care and showed some reciprocal responsive behaviour. This is consistent with a study of NICU fathers that found infant responsiveness promoted their involvement (Feeley et al., 2012). Staff can help parents recognize these moments when, for example, an infant calms down because of parents' actions. Interpreting infants' cues for parents is an essential part of family-centred care and supports bonding (Ahlqvist-Björkroth et al., 2017). Understanding infants' cues also decreases parental stress and promotes emotional closeness (Flacking et al. 2016).

Parents cherished the moments alone with their infants and together as a families, as this represented normality and normal parenthood. This was highlighted by the fathers, who all described closeness in moments when they were together with the infant and mother. The importance of being together as a family in the NICU for closeness has also been noticed by the NICU nurses (Feeley et al., 2016). However, support and interaction with staff members was experienced as an important part of the bonding process. The staff in the NICU has an important role to play supporting and facilitating closeness (Fenwick et al., 2008; Flacking et al., 2012; Russell et al., 2014) and by implication, normal parenthood. Good relationships between parents and staff promote parental well-being (Obeidat et al., 2009; Russell et al., 2014). Based on this study, parents considered nursing staff as a connection to their infants while the parents were not able to be in the NICU. Trust in staff made parents feel that their infants were safe and staff presence did not interfere with parent-infant bonding. This finding might be explained by the family centered care approach of the NICU (Ahlqvist-Björkroth et al., 2017).

Even brief physical distance, for example eating in the parents' room, disturbed the dyadic parent-infant relationship. Separation from an infant is the most stressful aspect of the NICU hospitalization (Wigert et al., 2006; Lindberg and Öhrling, 2008; Obeidat et al., 2009; Sikorova and Kucova, 2012; Aliabadi et al., 2014). Separation may be harmful to the development of maternal caregiving behaviours, which probably require exposure to infant cues in the early postpartum period (Kim et al., 2016). Parents accepted the separation caused by the NICU environment mostly without questionwhich. In this study, leaving an infant for any reason, but especially in the evening before extended separation, was emotionally challenging for parents. This was amplified if an infant was awake at the moment of separation. It is important that NICU staff invest in good and confident relationship with parents and convey that their infants will be well cared for when parents need to leave (Finlayson et al., 2014). In case of separation, staff could encourage parents to develop a goodbye ritual to make the departure less difficult for the parents.

Parents aimed to store closeness moments to be able to sustain the representation of their infants in their minds through the separation period (Pajulo et al., 2016); therefore, the NICU stay served as a rollercoaster ride with continuously changing emotions. Although 'filling up the closeness tanks' worked as a coping strategy that enabled parents to cope with the situation and could be one strategy to prepare for unavoidable separation, new strategies to decrease separation in future are needed to ease the emotional burden of parents (Flacking et al., 2016). The couplet care model, in which parents and infants are able to be together in the same unit throughout the entire hospital stay, could be a solution to minimize separation (Westrup, 2015).

It is noteworthy that only a few of the parents in this study spent their nights in the hospital although they all were able to do so and beds were available for them in their infants' rooms. Reasons for going home were better sleep quality and other family members to care for. The NICU environment was considered noisy and lacking privacy, thus sleeping at home was considered to be important for parental well-being. Although single family rooms provide more privacy than traditional open bay units, this new design has not completely eliminated environmental disturbances. Strategies to support parents to stay overnight in the NICU need to be considered. Moreover, the unit design and all staff members should provide a consistent message that parents are not visitors in the NICU (Finlayson et al., 2014).

Strengths and limitations

The study provided diverse and emotionally rich data, and the credibility of the analysis is enhanced by the inclusion of direct quotes. The data provide insights into topics that participants wanted to disclose and the recordings were not influenced by an interviewer. The participants recorded their stories in real-time and they are not based on memories, which supports credibility

(Holloway and Wheeler, 2012). Dependability was addressed by using investigator triangulation (Holloway and Wheeler, 2012). The research team discussed the emerging codes together to reach consensus.

The data were collected in one NICU thus the transferability of the findings is limited. The majority of parents participating in this study were mothers and their experiences are more prominent than fathers. Fathers who participated to this study are likely to be those who visit more often and are more involved with their infant during the hospitalization. In addition, only parents with medically stable infants were included, thus the findings may not be transferable to parents of NICU infants. However, the results support previous studies and provide interesting insights to parents' perspectives about closeness and separation in an NICU.

Conclusions

Parent-infant closeness and separation continuously alternated during the NICU stay and therefore the bonding process was complicated. Transferring from closeness to separation and vice versa were the most emotional moments: the arrival in the NICU was full of happiness and the departure caused anxiety and sadness. The parents of NICU infants search for closeness with their infants and cherished the moments together without any disturbance. They tried to fill up their 'closeness tanks' to be able to survive the separation period. Even short-term separation disrupted parent-infant dyad. The NICU staff has a crucial role to support closeness and by implication, early bonding.

Conflict of Interest

This research is not subject to any financial or personal interests which could have inappropriately influenced the results of the study.

Ethical Approval

The study protocol had a favorable statement by the Ethical Committee of the Hospital District of Southwest Finland (131/1802/2014) and was approved by the hospital administration. After verbal and written information was provided and any questions answered, written informed consent was obtained from each participant.

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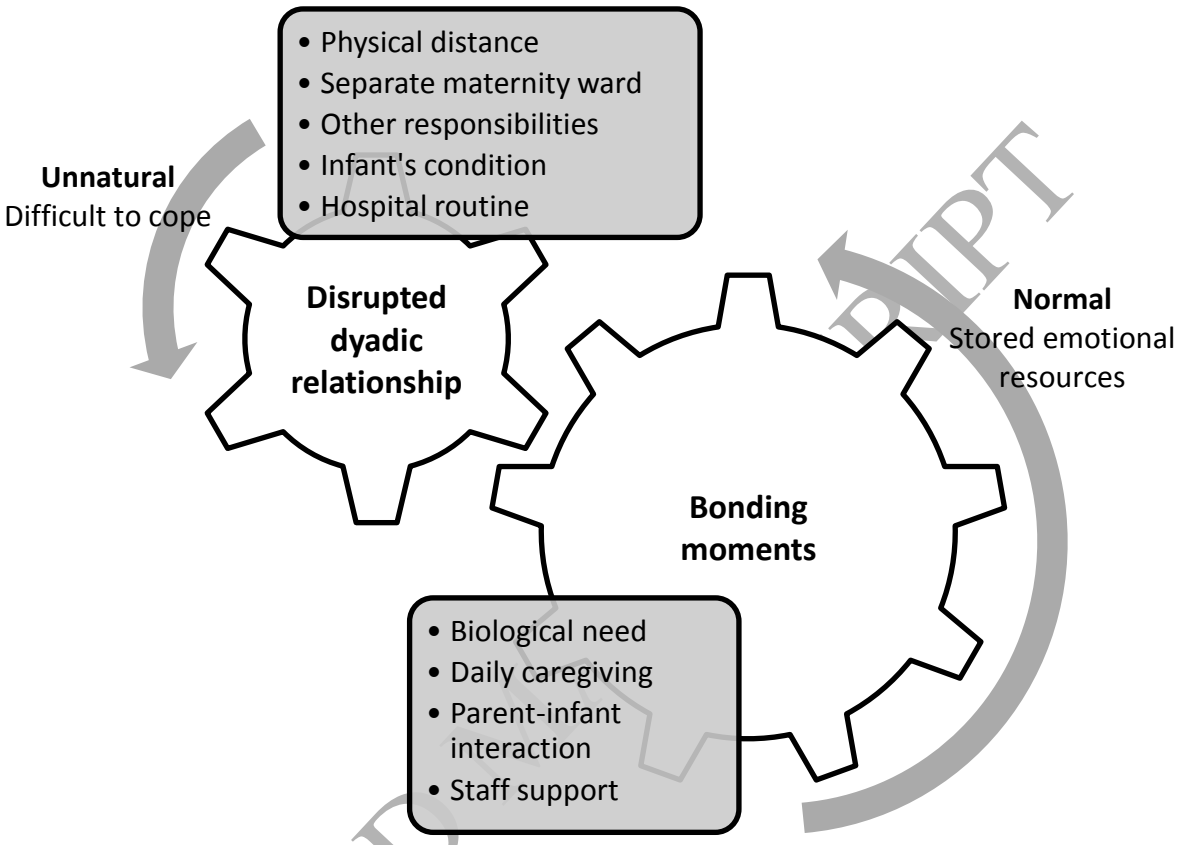

Figure 1. Rollercoaster of parent-infant closeness and separation in the NICU

Table 1. Parents and infants background characteristics

Background characteristics	**n (%)**	**Median (Range)**
Parents	23*	
Mothers	18	
Fathers	5	
Age		
Mothers		31 (27–38)
Fathers		34 (27–42)
Previous children in family	7 (41 %)	
Previous children in NICU	4 (22 %)	
Distance to hospital (min)		15 (5–330)
Daily presence in NICU (h)		9 (1–24)
Infants	19	
Gestational age		32.5 (26–41)
Location in NICU		
Open bay	5 (26 %)	
Single family room	13 (68 %)	
Care requirements		
Incubator	6 (32 %)	
Respiratory support (respirator, CPAP)	8 (42 %)	
Heart monitoring	17 (89 %)	
Skin-to-skin contact with a parent	19 (100 %)	
Age for first skin-to-skin contact (h)		5 (1min–12days)

*****_Background characteristics are based on 18 questionnaires: one parent did not fill in the questionnaire and the parents of four infants completed it together._