

REGULAR ARTICLE

Perceptions of European medical staff on the facilitators and barriers to physical closeness between parents and infants in neonatal units

F Dykes (fcdykes@uclan.ac.uk)^{1,2}, G Thomson¹, C Gardner¹, V Hall Moran¹, R Flacking²

1. Maternal and Infant Nutrition and Nurture Unit (MAINN), University of Central Lancashire, Preston, UK

2. Centre for Reproductive, Infant and Child Health (RICH), School of Education, Health and Social Studies, Dalarna University, Dalarna, Sweden

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Correspondence

Professor Fiona Dykes, Maternal and Infant Nutrition and Nurture Unit (MAINN), University of Central Lancashire, Preston PR1 2HE, UK.

Tel: +44(0)1772 893828 |

Email: fcdykes@uclan.ac.uk

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ABSTRACT

Aim: Studies have provided insights into factors that may facilitate or inhibit parent–infant closeness in neonatal units, but none have specifically focused on the perspectives of senior neonatal staff. The aim of this study was to explore perceptions and experiences of consultant neonatologists and senior nurses in five European countries with regard to these issues.

Methods: Six small group discussions and three one-to-one interviews were conducted with 16 consultant neonatologists and senior nurses representing nine neonatal units from Estonia, Finland, Norway, Spain and Sweden. The interviews explored facilitators and barriers to parent–infant closeness and implications for policy and practice, and thematic analysis was undertaken.

Results: Participants highlighted how a humanising care agenda that enabled parent–infant closeness was an aspiration, but pointed out that neonatal units were at different stages in achieving this. The facilitators and barriers to physical closeness included socio-economic factors, cultural norms, the designs of neonatal units, resource issues, leadership, staff attitudes and practices and relationships between staff and parents.

Conclusion: Various factors affected parent–infant closeness in neonatal units in European countries. There needs to be the political motivation, appropriate policy planning, legislation and resource allocation to increase measures that support closeness agendas in neonatal units.

INTRODUCTION

In Europe, preterm birth rates vary widely from 5 to 10% of live births (1). There are striking differences in neonatal mortality across Europe, with the highest rate being five times higher than the lowest in infants born at 24-gestational weeks (1). Furthermore, wide variations in breastfeeding rates, maternal depression and long-term outcomes for children have been reported (2–5). These differences do not necessarily reflect medical care and may be due to cultural and contextual issues, such as the amount and/or quality of parent participation, parent–infant closeness and healthcare practices. Differences in countries and units also relate to implementation of policies and strategies such as the Baby Friendly Hospital Initiative (6–8), Kangaroo mother care (9–12) and developmental care (13).

The natural environment for an infant is to be close to the caregiver, which, through a range of biopsychosocial mechanisms, contributes to infants' and parents' health and well-being and to parent–infant attachment. The benefits of early parent–infant closeness during the hospital care of preterm infants are substantial for infants and include improved neurological and neurobehavioural development, improved sleep structure, increased growth

and decreased cortisol levels and pain responses (14). Benefits for parents include increased well-being, reduced anxiety and depression, increased breastfeeding and higher competence in providing a nurturing home environment (14). For the parent–infant dyad, there is more optimal parent–infant interaction (14). There is also evidence that even relatively small amounts of parent–infant closeness

Key notes

- This study explored barriers and facilitators to physical closeness between parents and infants in neonatal units, as viewed by senior neonatal staff from five European countries.
- Participants highlighted how a humanising care agenda was an aspiration, but neonatal units were at different stages in achieving this.
- Facilitators and barriers included socio-economic factors, cultural norms, design of neonatal units, resource issues, leadership, staff attitudes and practices and their relationships with parents.

have benefits, such as improved early neurobehaviour of preterm infants (15).

Currently, it is considered best practice to enable parents to stay day and night with their infants in a single room, which has been shown to improve neurobehavioral organisation and growth in preterm infants (16). There are, however, wide variations in policies and facilities that enable parental presence in neonatal units. A European survey reported that 100% of the units included in Sweden had reclining chairs near the babies' cots and 100% had beds for the parents, while in the UK, these figures were 11% and 77%, respectively. Unrestricted parental access to neonatal units has been reported to be available in approximately 30% of units in Spain and Italy and 90–100% of units in Sweden, Denmark, UK, the Netherlands and Belgium (6). Additional restrictions, including visit duration and number of people at the bedside, were more likely in those units that did not allow 24-hour access.

The physical design of the neonatal unit in facilitating a supportive infrastructure for patients, families, staff and carers is becoming increasingly emphasised (14,17–19), with suggestions that poor clinical environments may impede staff in achieving improvements in care quality (20). A cross-national ethnographic study conducted in Sweden and England concluded that, when the space and place constructs a separation between mother and infant, it can make the mother feel unimportant by reducing her status to that of a visitor. The study highlighted the importance of spatial configuration of neonatal units on parental experiences, parent–infant attunement, infant feeding practices and ways and degrees of socialising with other parents (17). One barrier or facilitator that has been identified as very important for parent–infant closeness is the staff, as they are gatekeepers and have the professional authority to enable or prevent parental care, such as holding the infant, breastfeeding or simply being in close proximity (18,19,21,22).

While insights into how the neonatal environment may facilitate or inhibit parent–infant closeness in neonatal units have been reported, to date there has been a lack of qualitative insights into these issues from the perspective of senior neonatal staff. The aim of this study was to explore perceptions and experiences of consultant neonatologists and senior nurses in different European countries with regard to the barriers and facilitators to parent–infant physical closeness.

METHODS

Design and population

This study utilised a qualitative design, informed by a constructionist perspective which Crotty defined as the 'View that all knowledge, and therefore all meaningful reality as such, is contingent upon human practices being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context' (23).

Informants in this study represented professionals from nine neonatal units in five countries – Estonia, Finland, Norway, Spain and Sweden – who had participated in the conduct of the International Closeness Study (ICS). These informants attended the Separation and Closeness Experiences in the Neonatal Environment (SCENE) Symposium in 2014, during which the small group and one-to-one interviews were conducted. Of all the neonatal units involved in the ICS, only one of the 11 participating neonatal units, namely one country, was not represented as they could not be interviewed at that time. In total, 16 neonatal unit staff took part from the five European countries. Seven staff were consultant neonatologists, and nine were senior nurses. The neonatal units are labelled from one to nine and by the country of the participant to avoid references to the names of the unit.

Data collection

Six small group interviews consisting of two to three participants from a specific neonatal unit and three one-to-one interviews were conducted. Interviews were conducted by four of the authors (FD, GT, RF and VHM) and lasted from 30 to 90 minutes using a semistructured interview format. Eight interviews were undertaken in English, and one interview was undertaken in Norwegian and subsequently transcribed into English for analysis purposes. All interviews were conducted in private areas within the symposium venue and were digitally recorded and transcribed in full. The interviews covered questions on (i) the facilitators and barriers to parent–infant closeness; (ii) which procedures or interventions were used on the unit to encourage physical closeness; and (iii) what else needed to be in place or carried out to encourage parent–infant closeness. The interviewers were from different disciplines, midwifery, psychology, neonatal nursing and nutritional science. It was recognised, in a reflexive way, that these disciplinary backgrounds may have influenced data collection, analysis and interpretation. However, each researcher endeavoured to be highly aware of these influences and conduct the research in a way that maximised the trustworthiness of the findings (24).

Data analysis

Analysis was undertaken using a thematic framework (25) and was supported by MAXQDA qualitative data analysis software (VERBI Software, Berlin, Germany). This framework involved reading and rereading of the transcripts to enable familiarisation, organising and mapping the data into meaningful groups, rereading to ensure accuracy, followed by reorganisation and refinement. Initial analysis was undertaken by one of the authors (CG) with all analytical decisions shared and agreed with all five authors. We applied a particular theoretical lens to interpret the findings that stemmed from the ecological perspective (26). This highlighted the interdependence and interplay between people and their environments, as we wanted to understand and take account of physical, social, cultural

and historical contexts as well as the attributes and behaviours of people. It also shifts the focus away from reductionism and linear causality towards a more holistic outlook that appreciates and embraces complexity. This perspective was utilised to identify the macro- or societal-level issues, meso- or community-level issues and micro- or personal-level issues with regard to this field of study.

Ethics

Ethical approval was gained from the Joint Commission on Ethics of the Hospital District of Southwest Finland. All participants were provided with an information sheet and asked to sign a consent form. The names of the neonatal units involved are not referred to for confidentiality purposes.

RESULTS

This Pan-European study highlights staff perceptions of the facilitators and barriers to physical closeness between parents and infants in neonatal units. Most of the neonatal unit staff emphasised important changes in the ethos and values of neonatal unit care over the past decade, with increasing emphasis being placed on Kangaroo care, skin-to-skin contact and 24-hour access to facilitate parent–infant physical and emotional closeness. However, these changes were perceived as aspirational, with neonatal units being at different stages related to facilitators and barriers operating at a range of levels. The societal-level perspective in our study related to the social, economic and health policy contexts. The community-level perspective related to the local neonatal unit environments and included the organisation of care, staffing structures, spatial design and leadership. The personal-perspective related to individual experiences within the specific neonatal units. The findings are now discussed under the following headings and subheadings (Table 1).

Table 1 Themes and subthemes

Aspirations of neonatal unit care
<ul style="list-style-type: none"> • Humanising approach • The importance of closeness • Centrality of skin-to-skin contact • Keeping the family together
Societal-level facilitators and barriers
<ul style="list-style-type: none"> • Parental leave and rights • Rights of the child • Cultural norms
Community-level facilitators and barriers
<ul style="list-style-type: none"> • Design of the neonatal unit • Resource issues • Leadership
Personal-level facilitators and barriers
<ul style="list-style-type: none"> • Staff attitudes and practices • Staff–parent relationships

Aspirations of neonatal unit care

All of the interviewees emphasised how the aspirations of neonatal unit care should embrace a more humanising agenda, with a specific emphasis upon closeness between parents and infants, the centrality of skin-to-skin contact and keeping the family together.

Humanising approach

Staff emphasised a paradigm shift in neonatal unit care from a highly institutionalised model to a more humane way of caring, what might be described as humanisation of care. In the neonatal unit context, the humanising agenda was closely linked to the development of family centred care:

We have to be more human, because we lost it, I don't know why. When you entered the hospital it was not a human place. We lost something, I think, and we have to recover it. At the end the focus of your work is the family and the patient; for me this is the meaning of family centred care, to try to return to our humanity. (neonatal unit 9 – NU 9, Spain)

The importance of closeness

All participants perceived that physical contact between parents and infants was important which, in this context, related to situations where parents could not only be in close proximity to their infants, such as touching or skin-to-skin contact, but also through positive psychological responses, such as feeling less stressed, relaxed and attached to their infant:

Physical closeness is more than one thing. I think physical closeness is being physically close to each other, then you have the state of mind on top of that, being able to relax close to each other, that is different than being physical. And there is more than skin-to-skin, it's the level of contact. Awareness, attachment! (NU 8, Norway)

Centrality of skin-to-skin contact

It was felt by all the neonatal unit teams that skin-to-skin contact must commence early and be strongly recommended, planned and supported:

We need to start skin-to-skin right from the beginning, in the delivery room if possible. We have examples of that now that you can have the fathers in the wheelchair with the child on the chest and maybe walking with the ventilator beside the wheelchair, then moving to the unit, then they are connected really, really, early. This has to be planned and prepared in advance, but if everyone is on it all of the time then skin-to-skin contact has to come first. You can have it in protocols as well, it can be very high up. (NU 4, Sweden)

Keeping the family together

One of the keys to facilitation of parent–infant closeness was keeping the family together. The facilities for this

ranged from single parent rooms with a bed for the parents next to the infant to units that could not accommodate the parents overnight at all. See the section below on unit design. The units that did not have facilities to accommodate the parents in this way saw this as an aspiration:

We need to improve by finding ways to keep the family together and treat sick mothers together with sick children in the same room. Today they are separated, in the future maybe the realistic situation is that every mother can be together with her child as long as she is conscious. We have a constant debate between midwives on one side of our mothers and our nurses. For example, the midwife on the postnatal ward wants the parent to sleep and we, the neonatal unit staff, want them to be at the breast. (NU 4, Sweden)

The importance of keeping the family together was emphasised in the context of the mother who needs medical care in addition to her infant, with one neonatal unit team describing couplet care:

What is of extreme importance in avoiding separation is what we call couplet care, that is combining care of the infant with care of the parent. Approximately half of all mothers have medical issues so, prior to introducing this change, the couplet care, about ten years ago we found that the mothers didn't take care of their own medical needs. They wanted to be in the neonatal unit all the time so they didn't get their medication or eat properly because they didn't want to leave the children. You have to organise things so the mother's care can be provided in the neonatal unit. We actually have midwives or postpartum nurses as part of our neonatal staff so the mothers can stay with their babies. (NU 1, Sweden)

Societal-level facilitators and barriers

The societal-level perspective in this study relates to the social, cultural, economic and health policy contexts. These were hugely variable in terms of provision for parental leave and pay, emphasis on the rights of the child, social rules and hierarchies and cultural norms.

Parental leave and rights

Political and statutory issues such as variations in parental leave and sickness rights were highlighted 'We do have very good parental leave rights and payments, so that helps to have at least one parent with the infant' (NU 4, Sweden).

Rights of the child

Some participants emphasised how family centred care implementation in their neonatal unit 'had been done quite easily due to their long tradition of respecting the rights of the children according to the Convention on the Rights of the Child' (NU 1, Sweden).

Cultural norms

Some neonatal unit staff referred to the way in which cultural norms in their society instilled a sense of distance between parents and infants: 'We have a sense of 'distance' still in our heads. Our unit is, in a way, a reflection of society also and the social rules and hierarchies' (NU 4, Sweden).

Cultural norms also influenced attitudes to closeness; for example, in one of the countries, the close and extended nature of families was believed to have created anxieties among staff members regarding the introduction of family room designs:

Our society is different, as the family is not only the father, the mother, but also grandparent, uncles, cousins and all want to be together. So when we explain that we want to have a family room the nurses say 'wahhh!' because they imagine all the people inside the room, shouting, laughing, like in our houses. But I think if the parents have the possibility of having the family rooms the parents will probably protect the infant from that stimulus. They know because we are teaching them that. That it's not good for their infant, so the parents will probably tell the family to keep calm, only two people or one person and don't speak too loudly. (NU 9, Spain)

Community-level facilitators and barriers

The community-level perspective related to the local neonatal unit environment and included the design and spatiality of the unit, resource issues and leadership.

Design of the neonatal unit

The design of the neonatal units ranged from very facilitative towards parent–infant physical closeness to highly inhibitive. NU 1, for example, was described as being highly facilitative due to its family room design and innovative medical equipment:

The key is the design of the unit, as we have family rooms for everyone or most at least. Even when the babies are cared for in the emergency area we have family facilities so they can stay 24/7. Of course you also need the right equipment. We have developed a skin-to-skin continuous positive airway pressure (CPAP) system so we can actually transport babies on CPAP from delivery to the neonatal unit and we don't have to use transport incubators. (NU 1, Sweden)

The importance of parents feeling that they almost own the space was emphasised: 'The parents need to feel that 'This is our place' and the way we have the layout of the unit supports this as well as the staff attitudes' (NU 4, Sweden).

Most units, however, felt that parent–infant closeness was seriously inhibited by a lack of space:

The main barrier to closeness between the parent and child is space! The design! We think, small patient, small space, so if you have parents in a bed next to the

babies then we are too full, it is difficult. (NU 7, Norway)

Open-bay facilities appeared to create a range of problems, such as confidentiality and a lack of privacy:

In the same room there can be from two to six babies so they are like really squeezed in so if you want to have a personal discussion or be alongside your infant or breastfeed there is someone next you, so that can be an issue; a barrier for the parents. (NU 3, Finland)

Resource issues

Resource issues were raised related to the location of maternity wards and lack of necessary medical equipment, leading to transfers and parent–infant separation:

Unfortunately we have maternity hospitals where the babies are born but they do not provide mechanical ventilation - only CPAP - so if they need mechanical ventilation they go to the paediatric hospital to the neonatal unit. This, of course, means that there is separation. (NU 2, Estonia)

Another key resource issue related to lack of money to pay for adequate nursing staff:

We need more nurses and that is a big problem. The staffing problem is a big problem in many centres. We have the budget, but there are not enough people willing to take on the job on the salaries that we can offer. It has to change! (NU 1, Sweden)

Leadership

Good quality leadership was referred to as being essential to positively influencing the neonatal environment:

We need good quality leadership, otherwise we waste our time. You have to have key people, I mean change agents that are dedicated to make a change in the unit. Then you have to engage everyone in the organisation. It is really important that at the administration level both medical and nursing staff will pull together in the same direction and give positive feedback to the staff. (NU 1, Sweden)

Personal-level facilitators and barriers

The personal-level perspective related to individual attitudes, practices and experiences within the specific neonatal units.

Staff attitudes and practices

Participants across the units identified how staff tended to offer instrumental rather than emotional care: 'I think the nurses are offering how to clean the infant, bath the infant; all the practical things but not so much emotional care' (NU 2, Estonia).

Some also considered how parental involvement was controlled by the nurses, in terms of when and what activities they could be involved in:

I think it has become better, but I can see that things are still really controlled by the nurses - what the parents can do - so things are going in the right order, so we are doing this and now you can have the skin-to-skin and then we can try the infant at the breast but there is little time and then on to the next thing. So there is still quite a clear structure. There are a lot of facilitating nurses, but there are more controlling ones and parents notice. At night time the routines are more obvious; I still have a feeling that the nurses have a mind-set that the night time is their own time. (NU 3, Finland)

While increasing staff knowledge was perceived to be important, participants emphasised how staff needed to hold positive attitudes and beliefs about the practices they were trying to encourage, such as Kangaroo care and skin-to-skin contact:

The most important thing, the absolute number one, is that the staff believe that skin-to-skin contact and closeness is the best. I think the nurses, how they think about the parent's presence and the importance of it, that is what makes closeness successful or not. The doctors also have to believe in it and tell the parents about the importance of skin-to-skin. (NU 6, Norway)

One of the key influences upon staff attitudes was felt to be seeing the benefits of skin-to-skin and Kangaroo care for themselves:

We can change staff attitudes by seeing that Kangaroo care makes a difference. For example, we have one little infant that has improved very much because she doesn't need as much oxygen as in the incubator; they see the changes now. And this infant is on high frequency ventilation and they don't fear taking the infant out. (NU 9, Spain)

Crucial to supporting parents was having staff who could understand the infants' cues and teach parents the same:

The staff need to be able to read the signs. . .the cues of the infant. It is not enough to just redesign units. It is not enough to just hire midwives or Kangaroo care equipment. You have to have people that can actually interpret the care of the infant. It is also very important to know how to engage the parents in a constructive way. (NU 1, Sweden)

Staff–parent relationships

A positive staff–parent relationship was seen to be crucial. Neonatal units were at various stages with regard to the nurses transitioning from being the infants' carers to being the parents' facilitators in a collaborative relationship. This was generally perceived to be a gradual process:

Our staff still have a lot of work to do in stepping back and letting the parents be in front. It's getting better. We are on our way but we still feel we own the infant

and the unit. We are scared of parents deciding too much. Just in the last year, parents are finally allowed to take the infant in and out of the incubator on their own - that hasn't been done before. It changes everything when you allow parents to do more and more. Right now we are trying to get parents to help their babies when they have apnoeas and bradycardias and we are hands off, saying what they can do instead of doing it ourselves. But it takes time. (NU 8, Norway)

DISCUSSION

This study explored perceptions and experiences of consultant neonatologists and senior nurses in different European countries with regard to the barriers and facilitators to parent–infant physical closeness. The ecological perspective (26), which focused on the interdependence and interplay between people and their environments at the societal, community and personal levels, was helpful in highlighting the layers of influence referred to in this study. It also offered a framework for considering appropriate changes to policy, practice and research.

In terms of aspirations for neonatal care, it seemed that tensions needed to be addressed between midwives or postpartum nurses and the staff on neonatal units in relation to the needs of the mother and whether she needed rest or to be in the neonatal unit with her baby at her breast. Couplet care provided an ideal way forward to ensure that these tensions were reduced, but when this was not possible then such tensions needed to be addressed to avoid mothers experiencing conflict.

At the societal-level, there was a range of structural facilitators and barriers that influenced closeness between parents and infants, such as parental leave and rights. The extent to which the rights of the child were engaged with and translated into paediatric and neonatal settings was also important. In some countries, the right of the child to have close, continuous contact with his or her parents was seen to be crucial, with any interruption to this being seen as a potentially harmful intervention.

Turning to the community-level perspective, the organisational culture of any particular neonatal unit was crucial in facilitating or hindering closeness between parents and infants. Institutional culture is described as a series of layers with shared behavioural expectations and norms representing an outer, conscious layer, and values and assumptions representing an inner, less conscious layer (27). While it is important to understand the inner, tacit layer, there is evidence to suggest that culture is expressed and transmitted primarily through visible, shared behavioural expectations and norms. It is argued that individuals may be compliant with behavioural norms and expectations, without necessarily being consciously aware of the underpinning values and beliefs that direct their day-to-day practice (27).

The design of the neonatal unit and adequate resourcing can play a crucial role in the generation of a culture that facilitates or inhibits closeness (17). A lack of appropriate

facilities transmits important cultural messages about how the parental role is perceived and valued and yet this study demonstrated wide variations, ranging from babies being looked after in different units to their mother to spacious single rooms that accommodated the infant and parents. At one extreme, family centred care started directly after delivery in such a way that the infant was never separated from a parent and was in close contact until arriving at a single room and thereafter experienced couplet care. Experiencing a situation and an environment where there was no interruption of the closeness has been reported to facilitate attachment (17). The design of the unit also affected the staff–parent interaction. In an open-bay unit, parents may become dependent on the social bonds with the staff and feel observed and judged by staff, which contributes to feelings of stress, insecurity and shame (28). Parents also tend to mimic staff more often in such an environment compared to rooms and settings where there is a higher level of privacy (17). In a family centred culture with a single-room design, the institutional powers were more limited and the role of the staff was altered from being doers and supervisors to being facilitators. It is known that a sensitive and collaborative staff–parent relationship, based on trust and respect, can reduce the parent's feelings of helplessness and powerlessness and facilitate parent–infant closeness (29). Good quality leadership appeared to be important in managing the transformation to a more family centred approach that facilitated physical and emotional closeness between parent and infants.

On a personal level, in relation to individual experiences within the specific neonatal units, this study showed a clear paradigm shift taking place across neonatal units in Europe, away from entrenched institutionalisation to a more family centred, humanising approach. Kuhn (30) was the first to highlight that, for a given community or discipline, a specific range of beliefs, values and methods develop to solve a puzzle. He referred to this way of seeing the world by a specific discipline as a paradigm. This way of seeing may change over time to incorporate new knowledge and understanding within that discipline.

This study showed that a range of paradigmatic stances were adopted between neonatal units and even within individual neonatal units, with a wide variation in staff attitudes and staff–parent relationships. This is reflected in previous research, which showed that although there have been changes in attitude in neonatal care towards a more family centred approach, a medical and technical focus commonly persists, creating a gap between the rhetoric and the reality of everyday practices and experiences (31).

A strength of this study was that it appears to be the only neonatal study that has considered the perspectives of major change agents from different international and economic settings. However, it needs to be acknowledged that the neonatal units reported on represented a group of motivated staff who were attending the SCENE symposium and were therefore interested in the closeness agenda. It is therefore likely that they were at least aspiring to best practice and some units may have optimised conditions to

facilitate this more than neighbouring neonatal units, even within their own country. Nevertheless, it is clear from the narrative data that there were striking differences at societal, community and personal levels.

CONCLUSIONS

The importance of facilitating both physical and emotional closeness is undisputed and the body of evidence, as described above, that supports this is growing, so the imperative for change is strong. However, as may be seen from this study, within each country there needs to be the political motivation, appropriate policy planning and setting, legislation where appropriate and resource allocation to ensure that there is a scaling up of measures that support the closeness agendas within neonatal units. The UNICEF *Convention on the Rights of the Child* provides a powerful tool for making such strategic change. Within neonatal units, there needs to be considerable investment in staff education, research and use of space and facilities to support the closeness agenda. In addition, there needs to be investment in leaders who can engage with the transformative agenda.

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CONFLICTS OF INTEREST

The authors have no conflict of interests.

References

1. Euro-Peristat Project with SCPE and EUROCAT. *European Perinatal Health Report. The health and care of pregnant women and babies in Europe in 2010*. 2013. Available at: http://www.europeristat.com/images/doc/EPHR2010_w_disclaimer.pdf. (accessed on November 18, 2015).
2. Jotzo M, Poets CF. Helping parents cope with the trauma of premature birth: an evaluation of a trauma-preventive psychological intervention. *Pediatrics* 2005; 115: 915–9.
3. Shaw RJ, Deblois T, Ikuta L, Ginzburg K, Fleisher B, Koopman C. Acute stress disorder among parents of infants in the neonatal intensive care nursery. *Psychosomatics* 2006; 47: 206–12.
4. Miles MS, Holditch-Davis D, Schwartz T, Scher M. Depressive symptoms in mothers of prematurely born infants. *J Dev Behav Pediatr* 2007; 28: 36–44.
5. Bonet M, Blondel B, Agostino R, Comber E, Maier RF, Cuttini M, et al. Variations in breastfeeding rates for very preterm infants between regions and neonatal units in Europe: results from the MOSAIC cohort. *Arch Dis Child Fetal Neonatal Ed* 2011; 96: 450–2.
6. Greisen G, Mirante N, Haumont D, Pierrat V, Pallás-Alonso C, Warren I, et al. Parents, siblings and grandparents in the Neonatal Intensive Care Unit. A survey of policies in eight European countries. *Acta Paediatr* 2009; 98: 1744–50.
7. Nyqvist KH, Häggkvist A-P, Hansen MN, Kylberg E, Frandsen AL, Maastrup RN, et al. Expansion of the ten steps to successful breastfeeding into neonatal intensive care: expert group recommendations for three guiding principles. *J Hum Lact* 2012; 28: 289–96.
8. Nyqvist KH, Häggkvist A-P, Hansen MN, Kylberg E, Frandsen AL, Maastrup R, et al. Expansion of the infant-friendly hospital initiative ten steps to successful breastfeeding into neonatal intensive care: expert group recommendations. *J Hum Lact* 2013; 29: 300–9.
9. Anderson GC, Chiu SH, Dombrowski MA, Swinth JY, Albert JM, Wada N. Mother-newborn contact in a randomized trial of kangaroo (skin-to-skin) care. *J Obstet Gynecol Neonatal Nurs* 2005; 32: 604–11.
10. Nyqvist KH, Anderson GC, Bergman N, Cattaneo A, Charpak N, Davanzo R, et al. State of the art and recommendations. Kangaroo mother care: application in a high-tech environment. *Acta Paediatr* 2010a; 99: 812–9.
11. Nyqvist KH, Anderson GC, Bergman N, Cattaneo A, Charpak N, Davanzo R, et al. Towards universal Kangaroo mother care: recommendations and report from the First European conference and Seventh International Workshop on Kangaroo Mother care. *Acta Paediatr* 2010b; 99: 820–6.
12. Flacking R, Ewald U, Wallin L. Positive effect of kangaroo mother care on long-term breastfeeding in very preterm infants. *J Obstet Gynecol Neonatal Nurs* 2011; 40: 190–7.
13. Hamilton K, Redshaw M. Developmental care in the UK: a developing initiative. *Acta Paediatr* 2009; 98: 1738–43.
14. Flacking R, Lehtonen L, Thomson G, Axelin A, Ahlqvist S, Moran VH, et al. Closeness and searation in neonatal intensive care. *Acta Paediatr* 2012; 101: 1032–7.
15. Reynolds LC, Duncan MM, Smith GC, Mathur A, Neil J, Inder T, et al. Parental presence and holding in the neonatal intensive care unit and associations with early neurobehavior. *J Perinatol* 2013; 33: 636–41.
16. Lester BM, Hawes K, Abar B, Sullivan M, Miller R, Bigsby R, et al. Single-family room care and neurobehavioral and medical outcomes in preterm infants. *Pediatrics* 2014; 134: 754–60.
17. Flacking R, Dykes F. 'Being in a womb' or 'playing musical chairs': the impact of place and space on infant feeding in NUs. *BMC Pregnancy Childbirth* 2013; 13: 179.
18. Anderzen-Carlsson A, Lamy ZC, Eriksson M. Parental experiences of providing skin-to-skin care to their newborn infant—part 1: a qualitative systematic review. *Int J Qual Stud Health Well-being* 2014; 9: 24906.
19. Anderzen-Carlsson A, Lamy ZC, Tingvall M, Eriksson M. Parental experiences of providing skin-to-skin care to their newborn infant—part 2: a qualitative meta-synthesis. *Int J Qual Stud Health Well-being* 2014; 9: 24907.
20. Nichols A. The impact of the clinical environment on family centred care in the neonatal unit: a qualitative investigation. *J Neonatal Nurs* 2014; 20: 230–5.
21. Fenwick J, Barclay L, Schmied V. Craving closeness: a grounded theory analysis of women's experiences of mothering in the Special Care Nursery. *Women Birth* 2008; 21: 71–85.

22. Kymre IG. NU nurses' ambivalent attitudes in skin-to-skin care practice. *Int J Qual Stud Health Well-being* 2014; 9: 23297.
23. Crotty M. *The foundations of social research. Meaning and perspective in the research process*. London: Sage, 1998.
24. Lincoln YS, Guba EG. *Naturalistic inquiry*. London: Sage, 1985.
25. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006; 3: 77–101.
26. McLaren L, Hawe P. Ecological perspectives in health research. *J Epidemiol Community Health* 2005; 59: 6–14.
27. Glisson C, Green P. The effects of organizational culture and climate on the access to mental health care in child welfare and juvenile justice systems. *Adm Policy Ment Health* 2005; 33: 435–48.
28. Flacking R, Ewald U, Nyqvist KH, Starrin B. Trustful bonds: a key to “becoming a mother” and to reciprocal breastfeeding. Stories of mothers of very preterm infants at a neonatal unit. *Soc Sci Med* 2006; 62: 70–80.
29. Reis MD, Rempel GR, Scott SD, Brady-Fryer BA, Van Aerde J. Developing nurse/parent relationships in the NICU through negotiated partnership. *J Obstet Gynecol Neonatal Nurs* 2010; 39: 675–85.
30. Kuhn TS. *The structure of scientific revolutions*. Chicago: Chicago University Press, 1970.
31. Domanico R, Davis DK, Coleman F, Davis BO Jr. Documenting the NICU design dilemma: parent and staff perceptions of open ward versus single family room units. *J Perinatol* 2010; 30: 343–51.