



## Research article

# Developing family-centred care in a neonatal intensive care unit: An action research study

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## ABSTRACT

**Aim:** To develop, implement and evaluate family-centred interventions to promote parental involvement in caregiving in a Neonatal Intensive Care Unit.

**Methodology:** A participatory action research approach was used to implement two changes in practice a) improved skin-to-skin contact b) unlimited parental presence at the cot-side. The changes were underpinned by a family-centred philosophy of care and education. Data were collected from staff using a questionnaire, focus groups and interviews, and from parents using focus groups and interviews. Qualitative data were analysed using Framework and quantitative data analysed using descriptive and *t*-test statistics.

**Setting:** A Neonatal Intensive Care Unit in England.

**Findings:** Changes in practice were successfully implemented. Nurses reported positively on improvements in Family Centred Care; most notably information-sharing with parents, providing family support, enabling parental participation in care and improved competence supporting parents in care-giving. These changes were reflected in parental feedback.

**Conclusion:** Understanding the context of the neonatal unit can support cultural change when change is actively facilitated and owned by the staff concerned. Acknowledging parents as the main caregiver can be challenging for nurses and they require support and education to enable them to manage the changes necessary to provide Family-Centred Care.

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## Implications for clinical practice

- Understanding of the context of the neonatal intensive care unit can support - cultural change when such change is actively facilitated and owned by the staff concerned.
- Acknowledging parents as the main caregiver in the neonatal intensive care unit can be challenging for nurses and they require support and education to enable them to manage the changes necessary to provide Family-Centred Care.
- Tailored education strategies are effective in increasing nurses' awareness and skills in supporting parents to provide skin-to-skin care.

## Introduction

Preterm birth and subsequent admission of the infant to a neonatal intensive care unit (NICU) can be highly distressing for

parents (Skene et al., 2012). Growing awareness of the emotional and psychosocial impact of this experience on families has led to family-centred approaches within the NICU. Family-centred care (FCC) (Ramezani et al., 2014) involves the neonatal team taking account of parental experiences and changing NICU practices to create an environment that is supportive of parental needs and enables parents to be actively involved their infant's care. Although research highlights the benefits of FCC to parents and infants,

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practical support for parental caregiving remains inconsistent (Staniszewska et al., 2012; Vittner et al., 2015). This paper reports on a participatory action research study that sought to embed evidence-based interventions to support FCC in a NICU.

## Background

Preterm birth is the key determinant of poor infant outcomes relating to survival, long-term morbidities and quality of life; (Costeloe et al., 2012; Russell et al., 2014) stressful environmental influences contribute to these adverse outcomes (Browne, 2011). Although early maternal separation is a significant stressor for pre-term infants (Altimier and Raylene, 2013), the quality of mother-infant interaction in the early postnatal period influences an infant's emotional and cognitive development with long-term health consequences (Flacking et al., 2012). Physical contact between parents and pre-term infants in NICU enhances early neurobehavioural and psychomotor development (Treyvaud et al., 2009; Montirosso et al., 2012) and skin-to-skin contact accelerates brain maturation (Kaffashi et al., 2013). Involving fathers during gestation and childbirth also protects against neurodevelopmental delays in neonates with medical risks (Jackson, 2017). Breast-feeding is associated with improved cognitive development in children born preterm (Quigley, 2014) and parental involvement in pain management reduces pain and moderates analgesia use (Axelin et al., 2006).

FCC involves family assessment, parental participation in care and decision-making and sharing information between professionals and parents (Ramezani et al., 2014). Studies involving multifaceted approaches to FCC have reported positive outcomes for parents and infants. The Creating Opportunities for Parent Empowerment (COPE) programme, that provided information and enabled parental involvement in caregiving, reduced parental stress and length of stay (Melynk et al., 2006). The Family Nurture Intervention which involved scent-cloth exchange, sustained touch, vocal soothing, eye contact, skin-to-skin holding and family-based support interactions improved the quality of maternal caregiving (Welch et al., 2015). Additionally, parental presence in NICU for eight hours/day alongside education sessions and individual mentoring by nurses, reduced parental stress scores, increased neonatal weight gain and improved breast-feeding at discharge (O'Brien et al., 2013).

Despite evidence of the benefits of FCC, NICUs vary considerably in terms of implementing family-centred approaches (Redshaw & Hamilton, 2009). The reasons for this variation are not clear as most studies have focused on parental and/or infant outcomes rather than staff perspectives. Literature from implementation science emphasises the significant challenges of implementing evidence. Kitson et al. (1998) propose that for evidence to be implemented successfully three factors require consideration; context, evidence and facilitation. Whereas there is evidence of the benefits of FCC, the effect of the local context in introducing family-centred policies and practices is not well understood. The findings from studies that address the needs of specific groups of parents in a particular NICU may not be readily transferable to different contexts because of differences in culture, staffing levels and expertise, and resources. Moreover, it cannot be assumed that change can be introduced easily. Evidence indicates that active facilitation of change that takes account of local context and culture is more likely to lead to sustainable change (McCormack et al., 2001) Action research, whereby researchers address the local context when working alongside practitioners to facilitate change, has the potential to provide insights into how FCC might be embedded in NICU. The study reported in this paper describes how action researchers, neonatal staff and parents worked together to improve FCC in a NICU.

## The study

### Aim

To develop, implement and evaluate family-centred interventions to promote parental involvement in caregiving in NICU.

### Design

A participatory action research approach was adopted whereby we involved nurses, multi-disciplinary team (MDT) members and parents in designing the intervention, introducing change and evaluating its impact. The lead researcher (CS) acted as a change agent facilitating changes in practice while the wider research team evaluated its effect on staff and parents.

The study comprised three phases. In Phase 1, an understanding of the context of parental involvement in care was established, factors influencing parent-infant relationships were identified and evidence-based interventions developed to be implemented across the unit. In Phase 2, three action research cycles allowed the interventions to be tested and further refined through a process of planning, acting, observing, reflecting and re-planning. Phase 3 involved appraising the success of the interventions. A more detailed account of the methodology is provided elsewhere (Skene et al., 2016).

### Setting

The study took place in a regional NICU in England providing care for premature infants. It comprised 18 intensive care cots, 8 high dependency cots, 18 special care cots and six transitional care cots with approximately 900 admissions each year. During the study, 109 nurses, eight medical consultants and a wider MDT (dietitian, physiotherapists, speech and language therapists) worked in the unit where previous research (Skene et al., 2012) had highlighted parents' need for increased involvement in their baby's care.

### Participants

The staff sample comprised nurses working on NICU who completed a questionnaire. Some of these nurses also participated in focus groups and three senior sisters took part in individual interviews. Demographic details of nurse participants is given in Table 1.

Parents aged 18 years or above were recruited following their infant's admission to NICU if a minimum stay of 10 days was expected and the baby was 27+ weeks gestation. This excluded the most vulnerable babies and maximised the likelihood of parents being able to participate in caregiving. Parents were excluded if their infant required palliative care or if they were unable to communicate in English.

### Data collection

Data were collected between January 2014 and June 2016 using the following methods and summarised in Table 2.

- Focus groups explored factors influencing the parent-infant relationship (Phase 1), informed the development of FCC interventions (Phase 2) and evaluated the interventions (Phase 3). Nurse focus groups ranged from three to 10 participants per group, and parent focus groups from two to four participants. Due to difficulties parents encountered in attending focus groups, some individual interviews exploring the same questions were undertaken in phases 2 and 3.

**Table 1**  
Demographic details of nurse participants completing questionnaires.

Participant	Length of time working on NICU				Total
	Up to 6 months	7–12 months	13–24 months	25 months plus	
<i>Phase 1</i>					
Sister	1	4	0	27	32
Staff nurse	9	1	3	21	34
Support worker	0	0	0	8	8
Nurse practitioner	0	0	0	0	0
<b>Total</b>	<b>10</b>	<b>5</b>	<b>3</b>	<b>56</b>	<b>74</b>
<i>Phase 2</i>					
Sister	0	0	0	29	29
Staff nurse	4	4	4	18	30
Support worker	0	1	0	4	5
Nurse practitioner	0	0	0	3	3
<b>Total</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>54</b>	<b>67</b>

**Table 2**  
Data collection methods.

	Phase 1 n	Phase 2 n	Phase 3 n
Nurse questionnaires	74	–	68
Nurse focus groups	4	4	5
Nurse interviews	3	2	3
Parent focus groups	3	6	–
Parent interviews	–	5	9
Parent diaries	8	24	8

- Semi-structured interviews with three senior sisters in each phase explored wider issues associated with parental involvement in care, the process of introducing change and perceived success of the interventions.
- Structured parent diaries recorded parental time at the cot-side and involvement in care over a 10-day period (Phase 1n = 8, Phase 2n = 24, Phase 3n = 10). The diary provided a page for each day with questions such as ‘How long did you spend beside your baby today?’ and ‘What did you do with your baby today?’. Parents responded by ticking a multi-choice answer and/or writing comments in a text box.
- Questionnaire to examine nurse’s perceptions of FCC. It comprised items relating to FCC from a questionnaire developed by Warren (2015). Additional questions examining perceived competence were adapted from the maternal parenting self-efficacy questionnaire (Barnes and Adamson-Macleod, 2007). The questionnaire comprised 37 questions divided into five sections examining perceptions of information sharing with parents, family support, parental participation in care, nursery values, and nurses’ self-assessment of their competence in FCC. Each item was scored on a 5 point likert scale from strongly agree (5) to strongly disagree (1). The questionnaire was piloted with a group of neonatal nurses. No changes were necessary prior to administering it.

Focus groups and interviews lasted up to an hour and were led by a member of the research team using an agenda comprising open questions, e.g. *How are parents/you involved in their/your baby’s care?* An additional researcher acted as a moderator during focus groups.

#### Ethical considerations

Ethical approval was obtained from an NHS Research Ethics Committee (IRAS 160797). Research governance approval was obtained from the participating hospital. Informed written consent was obtained from parents. Nurse consent was assumed if a

questionnaire was completed and written consent obtained from focus group and interview participants.

#### Data analysis

Interviews and focus groups were audio recorded and transcribed by a professional transcriber. Qualitative data analysis used the ‘Framework’ approach (Ritchie et al., 2003). Members of the research team familiarised themselves with the data by reading interview transcripts several times. A thematic framework for coding data was developed based on the focus group/interview agendas and issues arising from initial scrutiny of transcripts. Individual transcripts were coded by applying the thematic framework and the coded data were organised into themes. Data from each phase were analysed separately and then brought together to form a composite analysis.

Data from questionnaires and diaries were analysed using EXCEL database. The mean and standard deviation for each questionnaire item in Phases 1 and 3 were calculated and Student’s *t*-test undertaken to examine for statistically significant differences, with the criterion for statistical significance set at 0.05.

#### Findings

An outline of the action research process and key findings for each phase are presented below. All nurses working in the unit were invited to complete questionnaires. Seventy-four out of 109 responded in Phase 1 (68%) and 68 out of 112 (61%) responded in Phase 3 (the larger sample size in Phase 3 reflected an increase in staffing). Although it was not possible to match individual responses in both phases, comparisons have been drawn between Phase 1 and Phase 3 data. The parents of 220 babies were identified as eligible to participate. However, 128 babies were discharged, transferred out of the unit or died before parental consent was requested. Of the remaining families, 80 parents (61 mothers, 19 fathers) of 61 babies consented to participate in the study (Phase 1n = 34, Phase 2n = 27, Phase 3n = 19).

#### Phase 1

Baseline data were collected from nurses and parents to develop an understanding of parental involvement.

Nurses described frustration in being aware of a parent’s need to be involved in caring for their baby, but were unable to provide the support needed because of workload. They did not have enough time to talk to parents, discuss information or help parents become involved in care. Nurses described how their practice was governed by unspoken rules and traditions embedded in the NICU

culture that hindered parental involvement. They highlighted the problem of restricted parental access to NICU and how being asked to leave during ward rounds, handovers and procedures prevented parents from being involved in care. Nurses trained in FCC felt unable to challenge outdated practices because senior colleagues did not always support them. They highlighted the need for a new philosophy of care to inform the development of more family-focused policies and education to enable change in practice.

Parents emphasised their need to respond to the physical and emotional needs of their baby and spoke of their desire for physical contact and to be actively involved in providing care (e.g. comforting, feeding, bathing) and in decision-making. Parents identified professional, cultural and personal factors that influenced their involvement in care. For example, nurses helped parents feel supported in the unfamiliar surroundings of NICU but could also make parents feel inadequate and prevent them from engaging in care. Parents wanted to understand the implicit and explicit 'rules' of the NICU culture to help them develop their parenting role. However, policies lacked clarity and parents needed help to understand what they could do for their baby. When individual nurses interpreted policies differently parents felt anxious and undermined. Parental confidence fluctuated from day-to-day and was influenced by nursing support, their baby's responses and their expectations of parenting. Lack of confidence caused parents to withdraw from caregiving for fear of harming their baby.

## Phase 2

Researchers discussed Phase 1 findings with nurses and the multidisciplinary team (MDT) and worked with them to develop a framework for developing FCC (Fig. 1), including a family-centred philosophy of care. An Action Research Group (ARG) comprising researchers, nurses, doctors and therapists developed interventions in keeping with the principles of the framework, focusing on changes that could overcome constraints to FCC. The interventions were tested and refined on the basis of data collected from parents and nurses during three action research cycles, each lasting three months. The changes introduced, and the rationale behind them, are described below.

### Family-centred philosophy

Staff and parents were invited to make suggestions for a philosophy of care that was refined by ARG and agreed by the whole neonatal team (Fig. 2). This was displayed on posters, given to staff, included in job descriptions and used to inform guidelines, education and practice changes.



Fig. 1. Framework for further developing Family Centred Care.

The neonatal team recognises that each baby and family is unique with their own needs, values and culture. Using the best available evidence and resources we aim to provide the highest quality of care for each baby and respond to their individual changing needs. We believe in a family-centred approach, which supports parents, to become increasingly involved and confident with their baby's care. We are committed to listening to parents, sharing information, responding to their comments and involving them in decisions that affect their baby. Working in partnership with parents, we aim to create a welcoming, caring and nurturing environment to support them to develop a close and loving relationship with their baby

Fig. 2. Philosophy of Care.

### Promoting skin-to-skin care

In Phase 1 staff understood the importance of skin-to-skin care in facilitating parent-infant closeness. However, few nurses were confident in supporting this. A skin-to-skin care awareness month was planned that included workshops, simulation and sharing examples of good practice. Skin-to-skin care was discussed during ward rounds and each baby's readiness was identified on a white board in each nursery. Photographs and posters were used to raise awareness and highlight benefits of skin-to-skin care.

### Unlimited parental access

Although in Phase 1 staff agreed that parents should be welcome in NICU during ward rounds, handovers and procedures, they were concerned that this might negatively affect confidentiality, the length of ward rounds and teaching opportunities. A trial period of unlimited parental presence was introduced and subsequently adopted when staff realised that their reservations were unfounded.

### Education on FCC

In Phase 1, nurses identified the need for education to support FCC. Those who had attended the Family and Infant Neurodevelopmental Education programme (FINE) (Warren, 2015; 2017) found it beneficial. Senior nurses agreed for all nurses to attend foundation level FINE training.

## Phase 3

The findings presented focus largely on staff perspectives of the FCC changes introduced. A separate paper will report on parental perspectives.

### Staff perceptions of FCC

Nurses presented a more positive perspective of FCC in Phase 3 as evidenced by questionnaire, focus group and interview data.

Questionnaire findings from Phase 1 showed a generally positive perception of FCC at the outset of the study. Findings from Phase 3 showed an increased positive perception of FCC in all items, although only some differences were statistically significant. The findings from each section of the questionnaire are discussed below and shown in Table 3.

### Information sharing

Eight items examined information sharing between parents and staff. At the outset nurses were generally positive about sharing information with parents. With the exception of contributing to the baby's diary the mean scores indicated that staff agreed/strongly agreed with each item. Phase 3 findings indicated a more positive perception of information sharing, with three items showing statistically significant differences. That information was to be

**Table 3**  
Nurse perceptions of Family Centred Care.

Questionnaire item	phase	N	Mean	Std. Dev	t-test	df	Significance
<i>Section 1 Information sharing</i>							
Parents are given information about the baby unit explaining facilities for them and their baby	1	74	4.45	0.66	1.3666	140	0.174
	3	68	4.59	0.55			
Nurses are good at delivering information in easily understood language	1	74	4.20	0.66	2.8108	140	0.006*
	3	68	4.49	0.56			
Parents' questions are never considered inappropriate or unnecessary	1	74	4.23	0.90	2.5720	140	0.011*
	3	68	4.56	0.58			
Professional translators are arranged for regular discussions with parents who have difficulty with English	1	74	3.99	0.92	0.7305	140	0.466
	3	68	4.10	0.87			
Parents have access to nursing care plans	1	73	3.00	0.97	4.5683	138	0.000*
	3	67	3.69	0.80			
Nurses take the time to update parents and explain the current situation	1	74	4.38	0.68	1.4648	139	0.145
	3	67	4.54	0.61			
Nurses and parents enjoy contributing to the baby's diary	1	73	2.90	0.99	1.4640	138	0.146
	3	67	3.15	1.03			
Parents are given information and opportunity to discuss their baby's care, regardless of their age, gender, education religion social/economic status, or ethnic background	1	74	4.32	0.66	1.484	139	0.147
	3	67	4.48	0.64			
<i>Section 2 Family support</i>							
There are regular meetings to encourage parents to meet and talk with each other	1	74	2.85	0.96	2.2156	140	0.028*
	3	68	3.22	1.03			
Parents have information about support groups	1	72	3.47	0.84	0.8303	138	0.408
	3	68	3.59	0.87			
Parents are informed about support available from family therapist, social worker, hospital chaplains, and know how to contact them	1	73	3.33	0.85	2.7753	139	0.006*
	3	68	3.71	0.77			
All parents have the same access to support services regardless of age, gender, education religion social/economic status, or ethnic background	1	74	3.93	0.82	0.5740	140	0.567
	3	68	4.01	0.84			
<i>Section 3 Participation</i>							
Parents are encouraged to contribute to their baby's care plans	1	73	3.64	0.98	3.7017	137	0.000*
	3	66	4.23	0.89			
Parents are welcome to attend and participate in the ward round when their baby is being discussed	1	74	4.35	0.69	2.6232	140	0.009*
	3	68	4.63	0.57			
Parents are involved in the baby's care from the first day	1	74	4.15	0.96	3.0074	140	0.003*
	3	68	4.56	0.61			
Parents' involvement with their baby does not depend on who is on duty	1	74	3.91	1.01	1.2436	140	0.215
	3	68	4.12	1.00			
Parents are encouraged to provide comforting touch for their baby from the first day with appropriate guidance	1	74	4.30	0.72	2.8247	140	0.005*
	3	68	4.60	0.52			
Parents are supported to learn about their baby's behaviour and how to respond appropriately to the baby's cues	1	74	4.03	0.76	2.9415	140	0.009*
	3	68	4.37	0.60			
All parents are offered the opportunity for skin to skin kangaroo care	1	74	3.93	0.98	2.4367	139	0.015*
	3	67	4.27	0.59			
Parents can stay for uncomfortable procedures being performed on their baby if they choose to	1	74	3.62	0.89	4.5767	140	0.000*
	3	68	4.22	0.64			
Parents are encouraged to support their baby during uncomfortable procedures	1	74	3.42	0.92	4.0567	139	0.000*
	3	67	4.00	0.76			
There are opportunities for family celebrations, customs etc.	1	73	3.45	0.85	3.5731	138	0.001*
	3	67	3.91	0.65			
Bathing is reserved for parents and the first bath is always planned as a family event	1	74	3.99	0.87	2.2156	140	0.028*
	3	68	4.29	0.73			
Dolls are used to demonstrate rather than professionals demonstrating on babies e.g. bathing, positioning for feeding	1	74	3.82	0.88	1.7046	140	0.091
	3	68	4.06	0.79			
<i>Section 4 Nursery values</i>							
The relationship between parents and baby is high priority	1	74	4.53	0.74	0.8466	140	0.399
	3	68	4.62	0.49			
Parents are not labelled as difficult when nurses find their coping strategies challenging	1	74	3.22	1.04	1.8413	139	0.068
	3	67	3.54	1.02			
Nurses do not show bias towards parents of their own or the dominant ethnic group	1	74	4.10	0.89	0.3472	140	0.729
	3	68	4.15	0.82			
Babies are never referred to as lazy or naughty	1	74	3.49	1.15	1.0702	140	0.286
	3	68	3.69	1.07			
<i>Section 5 Competencies</i>							
I know how to support parents in caring for their baby during a care time	1	74	4.55	0.76	2.8508	140	0.005*
	3	68	4.84	0.37			
I know how to help parents to understand their baby's cues	1	74	4.55	0.64	1.8162	140	0.072
	3	68	4.72	0.45			
I know how to help parents understand when their baby is uncomfortable	1	74	4.51	0.60	2.5858	140	0.010*
	3	68	4.74	0.44			
I know how to help parents understand when their baby is comfortable	1	74	4.54	0.58	2.8028	140	0.006*
	3	68	4.78	0.42			
I can help parents to comfort their baby	1	74	4.64	0.51	2.1969	140	0.030*
	3	68	4.81	0.40			

Table 3 (continued)

Questionnaire item	phase	N	Mean	Std. Dev	t-test	df	Significance
I can help parents to know when their baby needs to sleep	1	74	4.51	0.60	2.6982	140	0.008 <sup>*</sup>
	3	68	4.75	0.44			
I feel confident in supporting families during skin to skin care in ITU	1	73	3.82	1.29	1.7992	137	0.074
	3	66	4.18	1.04			
I feel confident in supporting families during skin to skin care in HDU	1	73	4.15	1.09	3.0435	137	0.003 <sup>*</sup>
	3	66	4.64	0.76			
I feel confident in supporting families during skin to skin care in SCBU	1	73	4.63	0.76	1.5917	137	0.114

<sup>\*</sup> p < 0.05.

perceived to be delivered in a more easily understood language and parents' questions were not considered appropriate or unnecessary suggest that nurses were better able to communicate with parents in response to their needs. A further item indicated that information sharing had improved through parents having access to nursing care plans.

#### Family support

Four items examined staff perceptions of family support. The mean for each item increased in Phase 3, with two items showing statistically significant differences. Regular meetings to encourage parents to meet each other were more likely to occur and parents were more likely to be informed about support available to them.

#### Participation

Eight items examined parental participation in care. Statistically significant differences were demonstrated with six items. Participation included encouraging parents to contribute to their baby's care plan and participate in ward rounds. Parents were more likely to be involved in their baby's care and provide comforting touch from the outset. Parents being helped to learn about their baby's behaviour and how to respond to the baby's cues supported involvement, and their participation in care-giving activities increased.

The opportunity for parental presence when uncomfortable procedures were performed increased and parents were encouraged more to support their baby during such procedures. Opportunities to provide skin-to-skin care and parental involvement in bathing also improved. Additionally, in Phase 3 nurses agreed more strongly that opportunities were presented for family celebrations and customs.

#### Nursery values

Four items examined nursery values. These included the priority given to parent/infant relationships, whether parents were labelled as 'difficult' if nurses found their coping strategies challenging, whether nurses showed any bias towards parents according to ethnicity and whether babies were referred to as 'lazy' or 'naughty'. Whereas the mean of each of these items showed a slight increase in Phase 3, the findings were not statistically significant.

#### Competencies

The final section asked nurses to self-rate their perceived competence relating to nine aspects of FCC. Overall nurses perceived themselves to be competent at the outset of the study with all items achieving a mean score of above 4 (agree) with the exception of confidence in supporting families during skin-to-skin contact in the intensive care unit (ICU). All items showed an increase in perceived confidence in Phase 3 with two thirds showing statistically significant improvements. Nurses felt better able to support

parents to care for and comfort their baby, and help parents understand whether their baby was comfortable and when their baby needed to sleep.

Promoting skin-to-skin care was a particular component of the intervention. Although the study focused on NICU, nurses rotated through high dependency (HDU) and special care baby units (SCBU). Nurses were asked to rate their perceived confidence in supporting parents during skin-to-skin care in these three settings. In Phase 1 they were most confident in supporting skin-to-skin care in SCBU and least confident in ICU. In Phase 3 mean scores for all three settings had increased but only confidence in supporting skin-to-skin care in HDU was statistically significant.

#### Changes in practice

During focus groups and interviews, nurses identified that overall, they considered that the changes made were beneficial.

*"The fear people had wasn't there. Babies were more settled, mothers' sitting with their baby tucked down their front for hours on end is good for mother and baby and therefore good nursing care. ... Once things were ironed out, we very quickly realised the benefits"*  
[Senior nurse]

When nurses experienced the benefits of the interventions to parents, babies, and themselves, there was an increased willingness to involve parents. Some nurses reported a more relaxed and less rule-driven culture in which they felt able to question practice and contribute to change.

*"I've noticed nurses are happier to work collaboratively with parents, rather than feeling they have to be experts and have all the answers. It's more about finding out together"*

[Nurse]

The changes implemented were perceived positively, particularly skin-to-skin care. Nurses reported a noticeable increase in parental involvement in caregiving and parental presence during ward rounds and procedures, which had become accepted as normal practice. They continued to highlight some difficulties with increased parental presence such as the impact on medical staff confidence or increased busyness during handover periods, but they recognised that the changes were beneficial

*"I've noticed a big difference where parents are not asked to leave, even for nurse handovers. ... It's difficult to remember what it was like before"*

[Nurse]

#### Changes in attitudes

Nurses perceived that attitudes towards FCC changed as the study progressed. There was an increased willingness to adopt a flexible approach to caregiving and involve parents more.

*“I think there’s been a mind shift, . . . we used to moan about the ‘challenging parent’, the ‘challenging parent’ has not gone away but our attitude’s changed . . . we no longer say ‘you can’t do that’. We’ve changed and therefore the challenge is no longer there”*

[Senior nurse]

#### Changes in culture

Nurses and parents in Phase 1 identified the need for a change in the NICU culture. By Phase 3, nurses perceived that changes in practice and attitudes had resulted in a more relaxed and less rule-driven culture in which nurses could question practices they did not understand and contribute to change.

*“There was a change in ethos and parents became more our focus. . . I think what we did by introducing this study was we said to them (nurses) ‘you can rip the rules up if you want’. We’re giving you permission to question those rules. . . and what we’ve got rid of is the unnecessary rules that we made up as we went along”*

[Senior nurse]

#### Changing role

Parental presence had an unexpected impact on staff workload. When parents were present during ward rounds and handovers, doctors felt able to discuss the baby’s progress and answer questions with less need to arrange follow-up meetings. Ward rounds were reported to be shorter because parental presence appeared to limit discussions to essential information. Furthermore, nurses did not spend time arranging for parents to leave during the ward round or finding them when it had finished. Moreover, when parents were present during procedures, they were involved and so there was less need for a second nurse to comfort and support the baby.

#### Parental perspectives of FCC

Parental data from Phase 3 suggested increased parental involvement care. Parents described more episodes of closeness and involvement than those in Phase 1 and rare incidents of separation were attributed to the baby’s medical condition rather than staff practices or attitudes. Diary data indicated an increase in direct physical contact in Phase 3. Skin-to-skin care was recorded in 35% of entries in Phase 1 and 53% in Phase 3. Episodes of skin-to-skin care lasting more than 2 hours were recorded in 16% of Phase 1 and 32% of Phase 3 entries. Unlike Phase 1, all parents in Phase 3 reported being able to hold their baby, often skin-to-skin in the first few days and this was seen as a significant and positive experience. Diary entries also suggested an increase in parental involvement. Activities such as mouth care with expressed breast milk, position changing, dressing and washing were recorded in 56% of diary entries in Phase 1 and 70% in Phase 3.

In contrast to Phase 1 where parents reported feeling inadequate, Phase 3 parents indicated that although they initially felt unable to care for their baby, their confidence grew as nurses encouraged them to do more. Parents confirmed that they were able to be with their baby whenever they wished including ward rounds, handovers and procedures. Moreover, participating in ward rounds and handovers allowed them to contribute to decisions regarding their baby. Being present during procedures alleviated their fear of the unknown and reduced their feelings of helplessness.

Phase 1 parents described their frustration at not knowing the rules of the NICU and what was expected of them, and having to await for permission from nurses to care for their baby. In contrast, Phase 3 parents described a therapeutic relationship with nurses who provided them with information, demonstrated caregiving, facilitated skin-to-skin care and helped to increase their confidence. Diary entries suggested an increase in partnership between

parents and nurses. In 41% of diary entries in Phase 1, parents were satisfied with their level of involvement in their baby’s care and this increased to 60% in Phase 3. Furthermore, parents in Phase 1 recorded episodes of exclusion from their baby’s care because nurses appeared too busy or because they were asked to leave their baby during ward rounds. In Phase 3, parents did not refer to any episodes of exclusion and described numerous examples of collaboration between themselves and nurses.

## Discussion

The purpose of this study was to develop, implement and evaluate evidence-based interventions to support FCC. By using an action research approach we worked with staff and parents to identify two changes in practice for which there was evidence of benefit to parents and infants. These changes were to improve skin-to-skin contact and to maximise parental presence by providing opportunities for parents to be present during ward rounds, nursing handovers and clinical procedures when previously they had been asked to leave the cot-side. The changes were underpinned by the development of a new philosophy of FCC and supported by education.

As mentioned earlier, successful implementation of evidence in practice is influenced by evidence, facilitation and context (Kitson et al., 1998). The two interventions implemented were supported by a robust evidence-base. Our role as action researchers enabled us to focus both on facilitation and context. Phase 1 enabled us to gain an understanding of the context of the NICU from both nurse and parent perspectives and led to the development of a new philosophy of care to support FCC that underpinned the changes. It also enabled us to identify education needs to support the changes. The lead researcher’s role as a senior clinical nurse in the NICU enabled her to work alongside staff facilitating the changes, each of which were led by a small team of NICU nurses.

The benefits of skin-to-skin contact for pre-term infants and their parents are well documented. Cardiorespiratory and temperature stability, sleep organisation and duration of restful sleep, neurodevelopmental outcomes, breast-feeding and modulation of pain responses appear improved for infants who have received skin-to-skin care during their hospital stay (Jefferies, 2012). Mothers show enhanced attachment behaviours and report an increased sense of their parenting role (Johnson, 2007). The changes introduced in this study led to an increase in the frequency and duration of skin-to-skin care. In view of the research evidence supporting skin-to-skin care it was not thought necessary to monitor the impact on infants or mothers however it is highly likely to have benefited infants, and parents reported satisfaction in the physical contact with their infants. By ascertaining nurses’ concerns about skin-to-skin care in Phase 1, we were able to tailor education strategies to increase nurses’ awareness and skills in supporting parents to provide skin-to-skin care. The value of education strategies to support implementation of evidence is well documented (Davis et al., 2013) and this led to change being embedded in practice.

Studies of FCC have highlighted the benefits to parents of flexible and prolonged access to their baby in NICU. By enabling parents to be present during ward rounds, handovers and procedures we were able to maximise the time that parents could spend with their infant. Both parents and staff spoke positively about the benefits of parents being present during ward rounds. Through the ARG we were able in Phase 2 to surface concerns that nurses and doctors had about parental presence during ward rounds/handovers and work with them to trial the changes before implementing fully. Trialing initiatives prior to full implementation is known to be beneficial (Foy and Eccles, 2013) and in our

case this resulted in ownership of the change among the NICU team.

Whereas two specific changes were made on the unit, the implementation of a philosophy to support FCC and underpinning education had a wider impact on nurses and the culture of the unit. Nurses reported positively on important aspects of FCC as evidenced in the questionnaire; most notably information sharing with parents, providing family support, enabling parental participation in care, and they also felt more competent supporting parents to provide care. This was reflected in focus group feedback and in data from parents. Whereas the literature identifies considerable variation in implementing FCC (Kymre, 2014), the findings from this study suggest that an understanding of the context of NICU can support to cultural change when such change is actively facilitated and owned by the staff concerned. This position is endorsed by literature on implementing evidence-based change (Squires et al., 2015).

### Limitations

This study was undertaken in a single NICU using a participatory action research approach in which a senior clinical nurse from the unit was the lead researcher. This inevitably raises questions about the extent to which the findings might be transferrable to other contexts where the culture of the unit is different. Moreover, it was not clear what influence the lead researcher's position as a nurse on the unit had on the outcomes of the study. We sought to minimise this effect by a research nurse who was independent of NICU recruiting staff and parents to minimise any sense of coercion to participate, and other members of the research team were involved in data collection.

Trustworthiness in the qualitative component of the research was demonstrated as follows. An audit trail was maintained of all steps taken. Data from focus groups, interviews, diaries and questionnaires were triangulated to check for consistencies and divergent perspectives across the data set. All the research team were involved in data analysis and initial work undertaken by one researcher was checked by another researcher to ensure consistency in coding and to safeguard against selective use of data and potential bias.

We were not able to identify a suitable existing questionnaire for nurses that focused on the aspects of FCC we were interested in examining. We therefore developed a questionnaire relevant to the aims of our study. The questionnaire requires further testing for reliability and validity should it be used more extensively.

We focused on families who were with their baby for long periods of time, willing to become involved in their baby's care and able to engage with staff. However, we are aware that little is known about the experiences of parents with restricted or reduced time in the NICU. Further research in this area is needed.

### Conclusion

This study has contributed insights into the challenges of implementing FCC in NICU. It has shown how an initial understanding of the context and culture of the unit from both nurse and parent perspectives, can lead to identification of the need for change and subsequent implementation of sustainable change. It has also shown that engaging nurses in the process of change and facilitation of the change process is beneficial. Facilitating this complex process requires a localised, personalised, multidimensional approach and should be underpinned by a philosophy of FCC, which recognises the intrinsic need of parents to care for their baby within the constraints of the NICU, and the responsibility of nurses to enable them to do so. Acknowledging parents as the main caregiver in the NICU can be challenging for nurses and they require

support and education to enable them to manage the changes necessary to provide FCC.

### Conflict of interest

Of the above authors, Kate Gerrish is a member of the Board of Trustees of the General Nursing Council Trust for England and Wales which part funded this study. However, she did not participate in any decisions regarding the award of the research grant. None of the authors of this paper have any conflict of interest.

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