

## Swedish mothers' experience of continuous Kangaroo Mother Care

Ylva Thernström Blomqvist and Kerstin Hedberg Nyqvist

**Aims.** To characterise the first infants receiving continuous Kangaroo Mother Care from birth to discharge in a Swedish neonatal intensive care unit and to investigate their mothers' experiences of this model of care.

**Background.** Admission of a newborn infant to a neonatal intensive care unit commonly implies separation of the new mother from her infant. Kangaroo Mother Care is a model of neonatal care which supports the parental role as primary care-giver and contributes to minimising the separation between the infant and parents.

**Design.** A retrospective survey design.

**Method.** A purposive sample consisting of 23 mother–infant pairs. Relevant infant data were obtained from their medical records. A questionnaire with questions about the infant's care and regarding Kangaroo Mother Care was designed for this study.

**Results.** The infants were born at a gestational age of 31–41 weeks, birth weight ranging from 1715–3700 g. The mothers of these moderately preterm and ill newborn infants showed good acceptance of the idea of providing their infants with continuous Kangaroo Mother Care during their stay at the neonatal intensive care unit. The mothers' evaluations of this method were predominantly positive. Negative comments concerned lack of information about practical application of the method, and some mothers perceived their infants' care during the night as exhausting. No mother would have preferred not to perform continuous Kangaroo Mother Care or to terminate Kangaroo Mother Care earlier than they did.

**Conclusions.** These mothers accepted this model of care very well, provided that they received the help and support they required.

**Relevance to clinical practice.** Mothers whose infants are admitted to an neonatal intensive care units in settings similar to the study setting should be offered opportunities to be present and provide Kangaroo Mother Care for their infants, to the extent that they are able and willing to do so and as permitted by the infant's medical condition and care.

**Key words:** babies, midwifery, mothers, nurses, nursing, Sweden

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### Introduction

In low-income settings, skin-to-skin contact (SSC) between mothers (parents) and their preterm infants, that is Kangaroo Mother Care (KMC), is frequently practised continuously, 24 hours a day. In contrast, parents in neonatal intensive care units (NICUs) in affluent societies commonly practise SSC

intermittently, such as one or two hours a day. This study represented the first evaluation of continuous KMC in a high-technology NICU after the unit had been reconstructed to allow all infants to have at least one parent present 24 hours per day.

KMC is defined as early, prolonged and continuous (or as far as circumstances permit) skin-to-skin care between the

**Authors:** Ylva Thernström Blomqvist, RN, PhD Student, Department of Women's and Children's Health, Uppsala University; Kerstin Hedberg Nyqvist, RN, PhD, Associate Professor in Pediatric Nursing, Department of Women's and Children's Health, Uppsala University, Uppsala, Sweden

**Correspondence:** Ylva Thernström Blomqvist, PhD Student, Department of Women's and Children's Health, Pediatrics, University Hospital, 751 85 Uppsala, Sweden. Telephone: +46 18 611 56 69.

**E-mail:** ylva.thernstrom.blomqvist@akademiska.se

low-birth-weight (LBW) infant and the mother, or someone substituting for the mother, such as the father or a relative. KMC begins at the hospital and continues, when necessary, in the home until the infant reaches term age; the infant receives (ideally) only breast milk as nutrition, the mother and relatives at home provide the infant's care after early discharge, and the infant is followed up in an adequate way (Cattaneo *et al.* 1998). According to the WHO guidelines for KMC (WHO 2003), the naked infant should be positioned upright between the mother's breasts, under her clothes, wearing only a nappy and a cap and booties when required. Skin-to-skin contact should ideally start as early as possible, preferably in the delivery room, or immediately on admission to the neonatal unit.

KMC can be applied in two ways. Providing a LBW or sick newborn infant with continuous SSC, 24 hours a day, is an optional alternative to incubator care (Charpak *et al.* 2005). When KMC around the clock is not possible, intermittent KMC (for limited periods such as one or two hours per day) is a good option, as this practice strengthens the mother-infant bond and facilitates breastfeeding.

Compared with conventional neonatal care, KMC can shorten the infant's length of stay at the NICU (Charpak *et al.* 2001, Gathwala *et al.* 2008), decrease the infant's need of incubator treatment and reduce the risk of hypothermia (Bergman *et al.* 2004). Further, the method may contribute to improved head growth (Charpak *et al.* 2001, Suman *et al.* 2008) and better weight gain (Suman *et al.* 2008). KMC has also been associated with higher breastfeeding rates at discharge and up to six months (Hake-Brooks & Anderson 2008). During and after KMC, infants have shown a lower and more stable heart rate and more stable oxygen saturation (Morelius *et al.* 2005, van Zanten *et al.* 2007). Furthermore, lower pain scores have been observed in infants who have received KMC (Morelius *et al.* 2005).

Despite increasing evidence of the safety and positive effects of KMC and despite the Swedish national parental and health insurances, which provide both parents with an opportunity to be together with their infant at the hospital, the KMC method is mainly applied as intermittent SSC for limited periods of time in Swedish NICUs. Possible reasons for this limited application may be insufficient knowledge among staff about the method, a predominant focus on medical and technical aspects of care and parent-perceived differences in power between the parents and staff (Wallin *et al.* 2005). One more plausible explanation may be found in a Cochrane analysis, from which it has been concluded that the number of high-quality randomised controlled studies has not been sufficient to recommend the complete KMC

method, with continuous SSC care, as a routine in the care of LBW infants (Conde-Agudelo & Belizan 2003).

Admission of a newborn infant to an NICU commonly implies separation between the new mother and her infant. Mothers of infants in the NICU spend much commitment and energy not only in getting to know their infant but also in getting to know the staff and understanding and anticipating their activities (Fenwick *et al.* 2008). In an NICU, the mother is commonly unable to stay with her infant 24 hours a day during the infant's period of hospital care and the care focuses primarily on the infant. These circumstances convey the implicit message that the infant does not need her or his mother/parents but only professionals with special education and high-technology medical care (Flacking *et al.* 2007). As a result, the maternal or paternal role is disregarded from the very beginning. The mother feels more like a visitor than a mother.

Research has shown that, compared with mothers whose infants receive conventional neonatal care, mothers who provide KMC are less depressed and less anxious, consider themselves more competent, feel stronger in their maternal role, have a more positive mood and perceive their children as being less abnormal (Feldman *et al.* 2002, de Macedo *et al.* 2007). Similarly, Tallandini and Scalembra (2006) concluded that one of the positive effects of KMC, even when carried out intermittently, is the feeling experienced by the parents that they are really doing something for their infant and that this makes some of their worries about the infant disappear. No physiological disadvantages for mothers providing KMC have been described, but Tessier *et al.* (1998) noted that mothers who practised continuous KMC felt more isolated and lonely than those whose infants received conventional neonatal care. These authors found that this was more common among mothers whose infants spent a longer time in hospital. They suggested that these mothers' infants did not gain enough weight or were sick, which made these mothers feel overwhelmed by the responsibility of taking care of their infants and in need of more social support.

This study was conducted in an 18-bed NICU at a Swedish university hospital, after the unit had been completely reconstructed to permit parents to be present with their infant 24 hours/day and to provide continuous KMC. The new unit consists of three intensive care nurseries with four care spaces in each (neonatal care level III). In every intensive care space, there is an adult bed for one parent, allowing continuous parental presence with the infant. There are also nine family rooms (level II), where parents can carry out their infant's care day and night, from birth until the infant's discharge. In these rooms, both the parents and siblings can

stay together with the infant. There is also a kitchen and lounge for parents and play areas for siblings. Even if the mother needs maternity care, she can nearly always stay with her infant 24 hours/day at the NICU and the nursing staff at the maternity ward come to her to provide her postnatal care. One-third of the NICU nursing staff are registered nurses, and two-thirds are licensed practical nurses.

After the reconstruction of the study NICU, new evidence-based guidelines for KMC were introduced. According to these guidelines, continuous KMC should be encouraged whenever this was possible, with consideration of the infant's medical condition and treatment and as far as it was accepted by the parents. All staff members were offered educational sessions about KMC and how to use it in their daily clinical practice (Nygqvist 2004). As this model of care had not been offered to parents in the unit before (previously only intermittent KMC had been practised), it was considered important to evaluate the mothers' degree of acceptance of and opinions about the method during the implementation period. The aims of the study were thus to characterise the first infants treated with continuous KMC from birth to discharge, to investigate aspects of the practical application of KMC in the care of these infants and to explore the mothers' experiences of this new model of care during the implementation period.

## Methods

### Design

A retrospective survey design was chosen. This study was a pilot study for a larger prospective investigation, for which approval had been obtained from the regional research ethics committee.

### Study sample

A purposive sample was identified, consisting of all mother-infant pairs who had experienced continuous KMC from birth to discharge from the study NICU during the period November 2004–May 2006. Inclusion criteria were initiation of continuous KMC from birth or within a few hours after birth and no permanent infant care location other than the parent's (mother's and/or father's) chest during the hospital stay. The nurses classified these infants as 'kangaroo infants' and recorded the infants' names on a list. A total of 23 kangaroo infants were identified. The admission rate during the study years was about 500 infants per year. Of these infants, about 300 were inborn and spent their whole hospital stay in the unit.

## Data collection

### Chart review

Relevant background data on the infant's medical status (such as birth weight, medical treatment, number of days at the NICU and breastfeeding at discharge) were obtained from the infants' medical records. According to the unit routines at that time, no records were made in infants' charts of the exact time when they were placed skin-to-skin or in an incubator or crib.

### Mail questionnaire

A questionnaire, with questions about the infants' care and data related to KMC, was designed for this study, based on relevant research (Martinez *et al.* 1992, Hurst *et al.* 1997, Cattaneo *et al.* 1998, Tessier *et al.* 1998, Wallin *et al.* 2005) and the authors' clinical experience. The questionnaire consisted of 24 closed questions, with positive or negative wording, and the mothers were asked to rank their response about their experience as 'Agree completely', 'Agree partly', 'Disagree partly' or 'Do not agree at all'. The questions were formulated such as to obtain an understanding of the mothers' experience of and attitudes towards continuous KMC regarding the following four aspects: mother-infant contact; maternal stress, anxiety and fear related to KMC; KMC and the role of the nursing staff; and the KMC method as such. To get as complete as possible, a picture of the mothers' perceptions of KMC, one open-ended question was included, in response to which the mothers were invited to give spontaneous comments about KMC and the care provided at the NICU. Content validity was tested by peer review by two experienced registered nurses who read the questionnaire for critical appraisal. A test of the questionnaire was conducted, where four mothers and one father of infants currently being treated in the unit responded to the questionnaire and gave their opinions about its contents and design. Subsequently, minor linguistic changes were made.

To ensure the mothers' anonymity, the questionnaires were not encoded. The mothers were informed that their participation was voluntary and that their responses would be anonymous. The questionnaires, together with a letter of invitation to participate in the study, signed by the authors, were mailed to the mothers' home addresses in June 2006. The mothers were asked to complete the questionnaire and return it in an attached stamped response envelope. A reminder was sent to all mothers in September 2006 with the aim of achieving an optimal response rate. Seventeen of the 23 mothers (74%) responded. Ten mothers responded to the open-ended question.

## Data analysis

Data from the infants' medical records and the quantitative questions were analysed with descriptive statistics in Statistical Package for Social Sciences (SPSS) version 15.0 for Windows (SPSS Inc., Chicago, IL, USA). The mothers' spontaneous responses to the open-ended question were investigated by qualitative content analysis (Graneheim & Lundman 2004). This method of analysis included the following steps: first, the text was read through to obtain an understanding of its content, and meaning units were then identified. The meaning units were coded according to their content, and these codes were grouped into eight subcategories. Finally, these eight subcategories were merged into four main categories to summarise the data. This categorisation was first made by the two authors separately, and the results of the analysis were then compared. This comparison showed total consensus directly.

## Results

### Infant characteristics

The majority of the infants were boys, preterm and delivered vaginally (Table 1). The most common diagnosis was prematurity, followed by hyperbilirubinaemia. The majority, 18 infants (78%), were breastfed exclusively at the time of

**Table 1** Characteristics of the study infants

Variable	<i>n</i>	Mean	SD
Male/female	16/7		
Full term/preterm	6/17		
Vaginal/caesarean birth	16/7		
Gestational age, weeks	23	35.3	2.6
Birth weight, grams	23	2535	511.9
Full breastfeeding, PNA	18	6.3	3.9
Full breastfeeding, PMA	18	35.9	2.0
Discharge PNA	23	13.0	6.9
Discharge PMA	23	37.0	2.2
Weight at discharge grams	23	2598	414.9
No. of days at NICU	23	12.7	7.5
Most common medical treatment			
Phototherapy	15		
Antibiotics	3		
CPAP	3		
Ventilator	1		
Most common physiological monitoring			
Oxygen saturation	21		
Electrocardiography (ECG)	8		

PNA, postnatal age, days; PMA, postmenstrual age, weeks; CPAP, continuous positive airway pressure; NICU, neonatal intensive care units.

discharge and two partly; for three infants feeding data were missing. The discharge from the NICU occurred at a postmenstrual age (PMA; corresponding to gestational age after birth) of 34–42 weeks, after a period of stay that ranged from 1–33 days. Three infants required intensive care immediately after birth, and this was needed for only a limited period of time; one by ventilator followed by continuous positive airway pressure (CPAP) and two by CPAP. A few infants had surgical diagnoses with a low level of severity (e.g. penile hypospadias and club foot). According to the infants' charts, nearly half of the infants had access to some other place for care than their parent's chest at least once during their hospital stay: an incubator (*n* = 7), an infant crib (*n* = 3), a water bed in an infant crib (*n* = 2) and a radiant warmer (*n* = 1). However, it was not possible to determine from these notes whether this equipment had actually been used and if so, the exact time of its use.

### Practical applications of KMC

According to the mothers' reports in the questionnaire (*n* = 17), nine infants were positioned on the mother's chest with SSC directly after birth (Table 2). The other eight infants commenced contact with the mother's chest within four hours after birth; however, seven of these were first positioned on the father's chest with SSC directly after birth and were then transferred to the mother. Seventeen mothers and 16 fathers provided KMC during the infants' stay at the NICU. None of the 17 mothers slept at home during the infants' hospital stay.

According to the information in the infants' charts (*n* = 23), data were missing for 13 infants regarding the infants' placement during transport between the delivery ward and the NICU. Eight infants were transported skin-to-skin on a parent's chest and two in a transport incubator. Thirteen infants stayed in a family room with their parent/parents from their first day of life. One infant was taken to a

**Table 2** Practical applications of KMC

Event	Incubator	Transport incubator	Father's chest	Mother's chest	Missing data
Before SSC on mother ( <i>n</i> = 17)	1		7	(9)*	0
Transport to NICU ( <i>n</i> = 23)		2	5	3	13
Participation in KMC ( <i>n</i> = 17)			16	17	0

\*'Directly'.

KMC, Kangaroo Mother Care; NICU, neonatal intensive care units; SSC, skin-to-skin contact.

family room on day one and two infants on day two; for seven infants these data were missing.

## Mothers' experience and perceptions of KMC

### *Mother–infant contact*

Overall, the mothers were satisfied with their contact with the infant. There were three questions regarding which all mothers' responses showed complete agreement. These responses indicated that they liked to have close contact with their infant, that none of them would have chosen not to provide KMC and that none would have preferred to sleep at home instead of being together with the infant in hospital. The question showing the lowest agreement in maternal responses concerned whether the mother had slept well during the nights with the infant in the kangaroo position.

### *Maternal stress, anxiety and fear related to KMC*

The mothers felt safe on the whole when they were providing KMC. They did not feel any apprehension about incidents happening to their infant during KMC, nor did they feel stressed during this care.

### *KMC and the role of the staff*

The lowest level of satisfaction reported by the mothers concerned the nursing care and the role of the staff. The mothers assessed the information received about the KMC method and about the option of asking other persons to participate in the provision of KMC at the NICU as inadequate. Furthermore, they perceived the staff as not being sufficiently sensitive to the mother's own needs and wishes regarding KMC. The statement about having felt forced to be at the hospital with the baby was refuted by all respondents.

### *The KMC method as such*

No mother would have wanted to discontinue KMC earlier than she actually did. KMC had made the mothers feel important as care-givers. Moderate agreement was indicated regarding the positive effects of KMC on the establishment of breastfeeding. Surprisingly some mothers chose response alternatives that meant that they would not perform KMC again if they gave birth to another premature infant.

## Mothers' suggestions about continuous KMC

### *Providing KMC*

All comments about KMC were very positive. The mothers stated that it felt good to be close, that KMC was a fantastic and good method, that it was a positive experience and that the parents had felt safe with this type of care. It felt natural

and gave the infant a good start in life. One mother commented that she would do it again. Another mother wrote that she and the father had continued with KMC at home. One mother, who had had experience of conventional neonatal care with her earlier children, declared that she preferred KMC:

We have experience of both the 'old' method and the new, KMC. I can easily say that we prefer KMC. (Mother 16)

### *Nursery environment*

All comments concerning the nursery environment were negative. The family rooms were considered too small and the bed-settee was uncomfortable to sleep on. In the intensive care nurseries, there was too much technical equipment.

### *Role of the family*

*The mother's own care:* One mother was disappointed about having been separated from her infant because of her own illness. Another mother complained that a routine for post-partum care of mothers rooming-in at the NICU seemed to be lacking.

*Family situation:* One mother emphasised that there is a real problem when there are siblings at home:

Although I am very satisfied with the KMC method, it made me feel divided, as I was unable to be close to my other child. This must be even more complicated for those whose infant needs a longer period of hospital stay. (Mother 7)

*Role of the parents:* One mother who was able to compare KMC with conventional neonatal care expressed the opinion that KMC will make parents feel more competent.

### *Role of the nurses*

*Breastfeeding support:* Only one mother stated that she had received satisfactory breastfeeding support. All other comments about this topic were negative. Mothers had wanted more advice and assistance and had experienced stress and exhaustion related to breast and cup feeding.

*Assistance with the infant's care:* A few mothers commented that responsibility for the infant's care during the night can be exhausting and that it is therefore important and a relief when nurses provide some assistance during the night:

The only thing was that it was nice to have some relief during the night, this worked fine with some nurses; others wanted you to have the infant close all the time and expressed this opinion rather blatantly. (Mother 5)

*Staff attitudes:* Mothers' complaints concerned inadequate information and the impression that communication between

the staff was unsatisfactory. However, two mothers stated that they had received all the assistance and support that they wanted. The mother who compared KMC with conventional care had perceived the emergence of a new holistic approach among the staff. Previously, in her opinion, the nurses were in complete charge of the infants' care and made all decisions, and a plethora of different attitudes seemed to exist among the staff. Comments about care during the night concerned problems related to encountering a large number of different nurses. Some nurses seemed to lack experience and practised different routines and conveyed different attitudes compared to the day staff.

## Discussion

To the authors' knowledge, this is the first study of mothers' experience of continuous KMC in a high-technology NICU. The data obtained here show that the participating mothers embraced this model of care and gave a positive evaluation based on their experience. On the other hand, although their assessment of KMC was favourable overall, they were not satisfied with the information they received about practical application of the method. They found provision of KMC during the night exhausting and did not consider the support and assistance provided by the nurses adequate.

The records of initiation of KMC in the infants' charts demonstrated that nine infants were positioned on their mother's chest immediately after birth and the remainder within four hours postpartum. Seven infants were placed on the father's chest directly after birth; this meant that 16 infants experienced a direct transition from intrauterine contact with the mother to extra-uterine physical contact with a parent. Only one of the infants was given incubator care before being placed skin-to-skin with either his/her mother or father. According to the unit routines at the time of the study, the exact time when the infants were placed skin-to-skin or in another care location (incubator or crib) was not among the data included in the mandatory documentation in infants' charts. This shortcoming meant that the exact amount of time spent by these infants in SSC could not be determined. This would of course have been valuable information and should be measured in future studies on this topic. However, as one inclusion criterion was that the infant should have no permanent care location other than the mother's and/or father's chest during the hospital stay, the authors maintain that the recordings in these infants charts constitute evidence that these infants actually received SSC for 24 hours, or nearly so. Very short interruptions may have occurred, such as when the infant may have been fed by a nurse during the night, or when the parent took a shower.

In our study, both preterm infants and ill term infants were included. The reason for including these two groups was that the focus of the investigation was placed on the mothers' experience of continuous KMC, irrespective of the infants' diagnoses. This topic inevitably also reflects the experience of becoming a mother when the infant is nursed in a neonatal unit. It is therefore possible that some results should not only be attributed to the KMC method, but also to the fact that these infants were never separated from their parents.

In their comments, all participating mothers expressed positive opinions about KMC. But both the mothers' responses to statements and their comments revealed dissatisfaction with the amount of information provided about practical aspects of KMC and about the option of inviting members of their social network to participate in KMC. Information to parents about the possibility of sharing the task of performing SSC with others is very important, as this gives them opportunities to rest and alleviates their fatigue. Several authors have noted that mothers appreciate timely information about issues they find important when their infant is being cared for in an NICU (Ward 2001, Wigert *et al.* 2006, De Rouck & Leys 2009). In a Swedish study, it was found that mothers with infants in a neonatal unit who did not receive the information they considered essential felt that they lacked control over the situation and that they were entirely in the hands of the staff (Erlandsson & Fagerberg 2005).

Some mothers in the present study would have liked to commence with KMC earlier than they did, although this was only a matter of a few hours. This illustrates the importance of preventing mother–infant separation as far as possible, no matter how brief. Earlier studies have shown that mothers want to be close to their infant, regardless of the reason for the separation (Erlandsson & Fagerberg 2005) and that the most stressful aspect of having an infant admitted to an NICU is the involuntary separation from the infant (Lindberg & Ohrling 2008). The NICU of the present study has a parent bed in every infant care space in the intensive care nurseries, which allows at least one parent to be together with the infant 24 hours a day. Wigert *et al.* (2006) found that a lack of parent rooms or beds for mothers at the NICU makes mothers feel unwelcome.

Although research has demonstrated that KMC promotes emotional ties and parent–infant bonding (Tessier *et al.* 1998), the mothers in this study did not appear to be convinced that KMC strengthened their love for the infant or made it easier for them to become acquainted with the infant. A probable explanation for this result is that these statements in the questionnaire were hypothetical and difficult to answer, as the mothers, with just one exception, were unable to make a comparison with any other type of neonatal care.

In response to the statement, 'If I gave birth to a preterm or sick baby again, I would not provide KMC', 12 mothers chose the response alternative 'Do not agree at all', while five answered 'Agree completely'. This would mean that these five mothers would decline use of the method in the event of another preterm birth. However, this response is not in line with these mothers' responses to corresponding questions, such as 'I would have preferred not to have my baby near me, with KMC', to which all participating mothers responded 'Do not agree at all.' Our interpretation of these five mothers' responses to the upper statement is that the sentence was formulated in an awkward manner, so that the mothers misunderstood it by overlooking the word 'not' in the middle of the sentence. This was further supported by the very positive comments about KMC given by two of the five mothers in response to the open question.

Tessier *et al.* (1998) discovered that some mothers who practised continuous KMC experienced isolation and a feeling of too much responsibility. This was not found in our study. One explanation for this is probably that all of these mothers in our study, except one, shared the task of continuous KMC with the father. Furthermore, the study NICU encouraged the presence of both parents for 24 hours a day, and parents were encouraged to walk about in the unit with the infant in the kangaroo position, for example to go to the parent kitchen and lounge, where they could meet other parents.

The reliability of the mothers' responses may be assumed to be good. Research has shown that mothers show good recollection of events from the time around their children's birth and that women even retain life-long memory of such experiences (Simkin 1991, 1992). A threat to the validity of our study was that the chart records regarding KMC were incomplete. For example, there could be a note of the presence of an incubator or an infant crib in the infant's care space, but no information confirming that the infant had ever been placed there. We therefore chose to rely on the assessment by the nurses who assisted in the designation of infants as 'KMC infants'. Regarding the mode of transport of infants to the NICU, documentation was only available for 10 of the 23 infants. However, it is reasonable to assume that the remaining 13 infants arrived at the NICU in a transport incubator, as this was the current basic routine.

The limited sample size in this study should be considered in the light of the current circumstances, i.e. the fact that the study was conducted during the initial phase of implementation of continuous KMC, when the guidelines were not applied consistently in the unit, but were primarily applied as longer periods of SSC than before, not as continuous SSC.

Therefore, a plausible explanation for why so few infants received continuous KMC during the study period was that the staff were reluctant to change their care-giving practices from conventional incubator/cot care to KMC, particularly practices related to the admission of newborn infants and especially so during the night-time. During this initial implementation period, the staff gradually began to modify their care-giving activities to adhere to the new principles of care. It is the authors' impression that continuous KMC was introduced when members of the KMC task force were on duty when an infant was admitted.

The study was performed retrospectively, as it was only some time after the introduction of the new KMC guidelines that it became clear that implementation of continuous KMC was feasible in this setting and could be accepted by parents. The use of more than one open-ended question would probably have resulted in more complex answers. An ideal design would have been a prospective study with an in depth qualitative design, using interviews instead of questionnaires to obtain a deeper understanding of this practice. As this study was based on a limited sample size and had certain methodological limitations, the results cannot be generalised. On the other hand, this was not the aim of the study, which was designed to explore the process of introducing new guidelines and to generate data that would provide a basis for a future prospective study in the same setting. Nevertheless, the results indicate that infants can be offered care at an NICU in an affluent society without separating them from their parents and that parents in this type of setting may be willing to perform continuous KMC. This was the key finding, which opens up a new interesting field in clinical research for NICU nurses.

## Conclusion

In this study, it was found that mothers of moderately preterm and ill newborn infants in an affluent society willingly agreed to perform continuous KMC during their infants' hospital stay. Parents should be offered adequate, repeated information about the KMC method, both orally and in writing. A prerequisite for this is that all professionals in an NICU have good knowledge about the benefits of KMC and the practical application of the method and express a positive attitude towards the method. It can be exhausting and stressful for parents to undertake the care of a small and sick infant around the clock. Therefore, nurses should actively offer parents the assistance they need by performing components in the infant's care, such as tube and cup feeding, especially during the night, so that the parents get a sufficient amount of sleep and rest.

## Relevance to clinical practice

The results allow the recommendation that mothers whose infants are admitted to an NICU in settings similar to the study setting should be offered opportunities to be present and provide KMC for their infants, to the extent that they are able and willing to do so, ideally on a continuous basis and as permitted by the infant's medical condition and care.

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## Contributions

Study design: YTB, KHN; data collection and analysis: YTB, KHN and manuscript preparation: YTB, KHN.

## Conflict of interest

None.

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