

Research

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Mother's Experiences and Perceptions of a Continuous Caring Model with Fathers after Caesarean Section: A Qualitative Study

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ABSTRACT

Background: In Chile, mothers and newborns are separated after caesarean sections. The caesarean section rate in Chile is approximately 40%. Once separated, newborns will miss out on the benefits of early contact unless a suitable model of early newborn contact after caesarean section is initiated.

Aim: To describe mothers experiences and perceptions of a continuous parental model of newborn care after caesarean section during mother-infant separation.

Methods: A questionnaire with 4 open ended questions to gather data on the experiences and perceptions of 95 mothers in the obstetric service of Sótero Del Rio Hospital in Chile between 2009 and 2012. Data were analyzed using qualitative content analysis.

Results: One theme family friendly practice after caesarean section and four categories. Mothers described the benefits of this model of caring. The fathers presence was important to mother and baby. Mothers were reassured that the baby was not left alone with staff. It was important for the mothers to see that the father could love the baby as much as the mother. This model of care helped create ties between the father and newborn during the period of mother-infant separation and later with the mother.

Conclusions: Family friendly practice after caesarean section was an important health care intervention for the whole family. This model could be stratified in the Chilean context in the case of complicated births and all caesarean sections.

Clinical Implications: In the Chilean context, there is the potential to increase the number of parents who get to hold their baby immediately after birth and for as long as they like. When the mother and infant are separated after birth, parents can be informed about the benefits of this caring model. Further research using randomized control trials may support biological advantages.

KEYWORDS: Parental continuous care; Newborn; Gentle caesarean section; Content analysis.

ABBREVIATIONS: NICU: Neonatal Intensive Care Unit; RCTs: Randomized Control Trials; UN: United Nations; WHO: World Health Organization; UNICEF: United Nations International Children's Emergency Fund.

INTRODUCTION

Research has shown the benefits of early newborn contact for the parents.^{1,2} The opportunity to hold the newborn infant immediately after birth is the pinnacle of the childbearing process.³ Previous studies have shown the benefits of early parent-infant contact after birth, which include increased parental sensitivity to the infants signals and the way the newborn presents itself,^{4,5} improved initiation of breastfeeding,^{6,7} and calmer infant with improved pre-feeding behavior.^{7,8}

A Systematic Cochrane Review of 34 Randomized Control Trials (RCTs) by Moore, et al.,⁹ explored the benefits of early skin-to-skin contact for mothers and newborn infants immediately after birth. The review involved 2177 mother-infant dyads and these were the results: breastfeeding increased; cardio-respiratory stabilized; infant crying decreased and infant-mother interaction increased.¹⁰ The review confirmed the benefits of early skin-to-skin contact for mothers and newborn infants after birth with no apparent short-or long-term negative effects. A recent review of 7 scientific articles provided some evidence that early skin-to-skin contact with the mother brought about physiological and psychological benefits: breastfeeding was initiated, newborns temperature was maintained, newborns stress reduced, bonding and maternal satisfaction increased.¹¹

The World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF)¹² recommend that mothers and newborns have skin-to-skin contact as soon as the mother is alert after caesarean section. Some research suggests that with collaboration between staff and parents, skin-to-skin contact during caesarean surgery can be facilitated^{6,11} while the mother is still on the surgery table.⁷ In America, family-centered "gentle caesarean" programmes enable mothers to have skin-to-skin contact during surgery.¹³ Hospitals in Europe have developed nursing intervention protocols to minimise mother-infant separation after caesarean births.¹⁴ These programmes have been shown to positively affect maternal-infant interaction and breast feeding initiation after caesarean delivery.¹⁵

However, in many hospitals around the world the caesarean section rate is increasing with no specific efforts to ensure mothers have body contact with their infant in the first minutes and hours after birth and this delays the first breastfeeding.¹¹ Biro, et al.,³ examined the association between maternity care and the model of early newborn contact. Their study found that the majority (92%) of women whose babies remained with them said that holding their babies as soon and for as long as they liked immediately after birth was essential. However, for women separated from their newborns only a minority (47%) reported that holding their baby was essential to them. It is unclear to what extent mother's lack of awareness, self-esteem and the way in which the alternatives were presented to them affected the results. But what is clear is that the suggested models of early

newborn contact following maternal-infant separation need to be investigated further.³

The caesarean section rate in Chile is approximately 40% and as a result many newborns in Chilean hospitals are separated from their mothers and miss out on the potential benefits of early contact¹¹ unless a suitable model of early newborn contact after caesarean section is initiated. The aim of this study was to describe mother's experiences and perceptions of a continuous parental model of newborn care after caesarean section during mother-infant separation in a maternity hospital setting in Santiago de Chile. The model of early newborn contact included early and continuous care of the newborn by fathers post-partum until reunion with the mother.

MATERIALS AND METHODS

Setting

This qualitative study describes mother's experiences and perceptions of a model of early newborn contact by fathers in a neonatal unit until reunion with the mother. The study was part of a randomized control research programme at the Sótero del Río Government Hospital, Santiago de Chile. Between 2009 and 2012 when this study was carried out, the caring routines did not allow fathers to be present in the surgery, post-surgery unit or the neonatal unit. The study was approved by the Ethics Committee, Scientific Assessment Metropolitan Health Service South East (reference no 16/5 2008).

The Model of Continuous Care

Immediately after birth the infant was checked for vitality by a midwife and then cared for under a heater for 30 minutes. The infant was then transferred to the neonatal unit and cared for by the father while the mother recovered in the post-surgery unit. After 90 minutes the mother was reunited with the infant and father at the obstetric unit for a further 90 minutes. The baby was placed with the mother either skin-to-skin or clothed to initiate breast feeding. The father was offered a chair by her bedside to take part in the family re-union. The physical wellbeing and behavior of the infant was observed by staff at the neonatal unit. After the intervention the mother and infant were transferred to the maternity ward for conventional care.

Data Collection

The day before the planned caesarean section the prospective parents were informed both verbally and in writing about the study and were invited to participate. After the intervention and with the mother still in bed, the mothers were asked to complete the questionnaire. The questionnaire covered demographic data and included four open ended questions relating to the mother's experiences and perceptions of the model of early newborn contact with the father. The study focused on

the first hours immediately after birth in the neonatal unit while the newborn was being cared for by the father. The following questions were asked: “What do you think of fathers as caregivers?” “What do you think of this caring model?” “What happened when you were reunited with your baby?” “What did you think then? What did you feel then?” It took between 15 and 30 minutes for the mothers to complete the questionnaire. After completion the mothers handed the questionnaire to the principal researcher, Ana Ayala (AA). All data remained confidential with the group of researchers.

Study Participants

130 couples were invited to participate, out of which 95 couples agreed to participate and provided verbal and written consent. The main reason for not participating was due to the partner having only limited time in hospital. The average age of the participating mothers was 29 years (SD 6.3) and the reason given for elective caesarean section was that they had had previous caesarean section(s) and ‘on demand’. The mothers were healthy, multiparas and had an average of two previous children between 0 and 5 years of age. 53% of the infants being born were girls and 47% were boys. All infants were healthy with a mean weight of 3517 grams.

Analysis

The written responses to the open questions were analyzed qualitatively inspired by Malterud’s content analysis.¹⁶ The analysis contained *de-contextualization* and *re-contextualization* phases. In the *de-contextualisation phase*, the paragraphs and sentences were divided into text parts that related to the aim. The text parts were labeled with a code. The codes emerged inductively (Tables 1 and 2). In the step of condensation, the text was translated from Spanish into English by the researchers who were fluent in both Spanish and English. This process of simultaneous translation and condensation resulted in a description of the meaning of each text part. The process continued until a mutual understanding of the translation and meaning of the text parts was obtained.

Further analysis focused *re-contextualization* in a process where the text parts were put together in code groups. The code groups were then described and divided into categories according to similarities and differences. The researchers were all included in the analysis and in the final step of the process the text in the code groups and the division into categories were

agreed. One theme emerged: a family friendly practice after caesarean section (Table 3) with 4 categories. Text parts sorted into categories are presented in number (n) and percentage (%) in each category. Quotations have been chosen to illustrate the findings. In the final step of the analysis the principal researcher, Ana Ayala (AA) double checked the original text with the descriptions presented below.

RESULTS

One theme was identified ‘family friendly practice’ after caesarean section and comprises 4 categories: ‘beneficial to the baby’, ‘beneficial to the family’, ‘beneficial to the mother’ and ‘beneficial to the father’. The mothers described the benefits of a continuous parental model of care after caesarean section during mother-infant separation. The father’s presence was important to both the baby and mother and was viewed as an enriching experience for the baby. The mothers were reassured in knowing that the baby had not been left alone with staff. It was wonderful for the mothers to experience that a father could love their baby in the same way that a mother does. Mothers felt that ties were created between the father and newborn in the time they spent together and later between her and the newborn. This arrangement was considered ‘family friendly practice after caesarean section’. Quotations have been selected to illustrate and validate the results.

Beneficial to the Baby

In this category the mothers described the benefits of the father’s presence and continuous care of the newborn infant.

The father’s presence was important: The mothers felt that because they were not able to be with the baby because of post caesarean section caring routines, the fathers’ presence was important for the baby: “It was important for our daughter that the father was present when I was not able to [be]” (Informant 22). The mothers were reassured that the baby had not been left alone with staff. The mothers could see that ties had been created between father and baby and it was an enriching experience for the baby: “It was super good that ties were created between the baby and his father” (Informant 60). The mothers heard from the father and staff that the baby was awake but calm and thought this an excellent arrangement for the baby.

Relating to both parents: The arrangement was considered “good practice” (informant 26) because the baby got to spend

Text unit	Condensation	Code	Category	Theme
Nice, very special and wonderful experience, very comfortable with the fact that the father is present	The mother expressed that this experience is different if the father is present	Wonderful experience that the father was present (code58)	Beneficial to the mother	Good practice

Table 1: Example of the analysis process.

CATEGORY	CODE GROUP	CODES
Beneficial to the baby	The father's presence was important	It was important for our daughter that the father was present
	Relating to both parents	Baby is not alone/not with strangers, babys' recognition of the parents
Beneficial to the family	A way to help the parents take care of their child after caesarean section	I think that this is one way to help women and mothers, parents with their child
	A natural process of becoming mother and father	Caring model/continuous care, mother and father equally important /continuous bonding with parents/family,good for parents
Beneficial to the mother	Supportive environment during mother-infant separation and after reunion	Comfortable, it was very beautiful and gratifying. Beautiful; definitely exceeded all expectations.
	Tranquility while recovering during mother- infant separation	Content, confident, safe/relaxed, wonderful experience the father is present, mother secure, peace, time to recover, calmness
	Happiness and bonding when reunited with the baby	Unforgettable reunion, happy when reunited, love, beautiful experience, bonding/attachment with the mother
	Supported by committed fathers	Supported, understood, feeling the father is committed, pleased as a mother and wife, good experience/unique/excellent, new experience
Beneficial to the Father	Involved and empowered	Bonding father and baby, content father, took care of the baby, the fathers deserve it
	Getting ready for the responsibility	Fathers' presence important for the baby father's involvement
	Unique health care intervention	Closeness, excitement/happiness, new experience for the father/something special for the father

Table 2: Categories, code groups and codes.

Theme	Category
A family friendly practice after caesarean section	Beneficial to the father n=56 codes (21%)
	Beneficial to the baby, n=12 codes (4.4%)
	Beneficial to the couple n=77 codes (28.6%)
	Beneficial to the mother=124 codes (46%)

Table 3: Text parts/codes sorted into categories presented in number (n) and percentage (%) for each category.

time with both parents after birth: *"It was good because the baby can share equal time with the mother and the father"* (Informant 88). This helped the baby relate to both parents and recognise the parents' voice: *"It was very good that our daughter heard familiar voices of his [the baby's] father and mother"* (Informant 29). The mothers preferred the baby to be cared for by them or by the father rather than being left alone with staff: *"I think it is very positive because if he [the baby] is not with me he is with his father and not with strangers [staff]"* (Informant 10).

Beneficial to the Family

In this category the mothers described the benefits of fathers'

continuous care of the newborn and how it was beneficial to the family.

A way to support the parents to take care of their child after caesarean section: Mothers explained how fathers' care during maternal-infant separation was a good way of providing continuous parental care for their child: *"I think that this is one way to help women and mothers, parents with their children"* (Informant 14). Parent's continuous care for the newborn directly after birth, first by the father and then by the mother, was viewed as an opportunity for the baby to bond with the father first and then with the mother. Early involvement of fathers was seen by mothers as "a gift" (Informant 4). The mothers believe that fathers

were equally as important to the baby as they were. The idea that the baby was a shared responsibility meant that the father cooperated with the mother from the beginning, laying foundations for how the family would function in the future: *"They [the fathers] should be part of it all, the children are made out of two"* (Informant 81). The mothers reflected on how the experience was good for them as a couple because it gave them a shared experience of protecting the baby: *"[It was a] great way to awaken the affection between the parents as well"* (Informant 29).

A natural process of becoming mother and father during maternal-infant separation: The arrangement of fathers caring for the baby during separation was seen as part of the natural process of becoming a parent: *"It was something good for us to get to know him [the baby] from the first minute of life. First with his father and then with me. It was a unique experience to all three of us"* (Informant 9). The mothers appreciated the father's immediate involvement and efforts to get to know the baby: *"Very good because there was a connection with the baby and that is the best. The father adopted his son and then we met all three. I think this was good because the baby created a very close bond to both of us"* (Informant 94).

Beneficial to the Mother

In this category the mothers described how the father's care of the baby was beneficial to them.

Supportive environment during mother-infant separation and after reunion: The supportive environment during maternal-infant separation and after reunion was described as nice, good, pleasant, genial, positive, beautiful and wonderful. The mothers were thankful to the staff that made this care arrangement possible: *"It was exciting and a very good experience at all times"* (Informant 71). It was an experience that exceeded all expectations: *"It was very beautiful and gratifying. Beautiful definitely exceeded all expectations"* (Informant 55). The mothers were aware that not all parents had the opportunity to care for their baby immediately after caesarean section which made their experience unique. The mothers described feeling empowered that they, the father and whole family were in a staff-supported environment that enabled them to care for their baby. Although the mothers wanted to be with their baby, they felt calm during the period of separation because they were in a supported environment: *"I wanted to see my baby right away but I kept calm"* (Informant 72). The mothers described feeling strange once separated from the baby; they felt that something was missing: *"I felt anxious and happy at the same time because I felt something was missing"* (Informant 14). The mothers would have preferred the family to have stayed together rather than be separated. However, the mothers thought that staff were well placed to support both parents to care for the newborn infant. Staff supported the fathers to be affectionate towards the baby and supported them to build emotional ties: *"It was good because he [the father] took care of the baby during the first hours of her [the baby's] life and*

then she should remain with me" (Informant 1).

Tranquility while recovering during mother-infant separation: The mothers expressed how calm, relaxed, safe, secure and happy they felt knowing that the baby was not alone and accompanied by its father: *"I was not worried; I was calm because I knew that the father cared for our daughter"* (Informant 48). The mothers felt safe and could relax knowing that the father was there to protect them and the baby: *"I felt very comfortable and secure knowing that the father was with the baby I knew that nothing could happen to us"* (Informant 33). This aided the mothers' recovery because they could rest in confidence.

Happiness and bonding when reunited with the baby: The mother's recognized the importance of the father taking on the role of primary caregiver. Once the baby was reunited with the mother, she became the primary caregiver, which meant that both parents had a shared experience of being the primary caregiver. The mothers described feeling pleased, happy and content once reunited with their baby: *"It was something beautiful and I remained content"* (Informant 25). It was described as a *"very enriching experience. She took the breast"* (Informant 38). The mothers described feeling overwhelmed with love for their baby: *"I felt very full of love then"* (Informant 91) and talked about the immediate bonding as exciting: *"I was so excited because I felt her [the baby's] body on me and that made me immediately attach"* (Informant 46). This bonding was really quite special and the mothers felt close to their baby: *"I had a special bonding I never had with my previous children"* (Informant 55).

Supported by committed fathers: The mothers explained how they felt protected by supportive fathers. The fathers demonstrated their commitment to the mother and baby by keeping them safe. The mothers felt supported and understood by their partner. When the mother and infant were reunited, the mothers saw that the fathers had been spending their time with the baby and this made them happy: *"I felt pleased as a mother and wife"* (Informant 82). The mothers were reassured by the fathers' presence: *"Cute, very special and wonderful, I felt very comfortable with the fact that the father was present"* (Informant 38). At the reunion the mothers were still in a lot of pain from the surgery which made it difficult for them to be close to their baby. This made it even more important to have the fathers' support: *"I felt glad and I wanted to hug him [the baby] but I had a lot of pain"* (Informant 64).

Beneficial to the Fathers

In this category the mothers talked about their perceptions of the fathers' involvement and continuous care of the baby during mother-infant separation.

Involved and empowered: The mothers thought it was good that the fathers were present for the first hours of the baby's life because they became involved in the whole experience: *"I felt*

good that the father participated in the first moment and hours after the birth of the child and that he saw what came after the birth" (Informant 3). The mothers could see that the fathers felt more involved in the care of the baby: "I think it is very good because the fathers are able to take care of the baby to 100%" (Informant 48).

Getting ready for the responsibility: The mothers described how the time spent getting closer to the baby helped build the fathers' self esteem. This was described as a positive and enriching experience that helped prepare them for the responsibilities of fatherhood. The mothers were reassured that the father was taking care of the baby as this helped build ties between the father and newborn infant: "I found it great because the father and child got connected" (Informant 18). Time spent with the baby meant the fathers' could become attached: "It was excellent that the father got attached to the baby. It is very important for a fathers' self-esteem" (Informant 39). The mothers identified a connection between the fathers' closeness to the baby and the father becoming more responsible and growing into fatherhood: "I really liked that the father felt closer. It made him also more responsible as a father" (Informant 61).

Unique health care intervention: The opportunity to spend time with the newborn infant was an experience that made the fathers content, happy, proud, excited and emotional. The mothers agreed that the fathers deserved to be content and happy in their parenting role. Caring for the baby immediately after birth was a unique experience for the father and generated new feelings and emotions: "The father and the baby were able to share an experience and feel new sensations" (Informant 18). Caring for the newborn was a new experience for the fathers: "It was the first time my husband entered childbirth" (Informant 53). In other circumstances the fathers may only have been given a couple of minutes with the newborn baby whereas this experience offered them several hours which was "very important because the father could not experience this with the previous baby" (Informant 46).

DISCUSSION

This study describes mothers' experiences and perceptions of a continuous parental model of newborn care after caesarean section during mother-infant separation. The model of early newborn contact started 30 minutes after birth and included continuous presence and care of the newborn infant by fathers postpartum until reunion with the mother. This study found that this model of care benefited the family, parenthood, the newborn infant, the couple and the parents individually.

The mother's descriptions indicate a certain amount of surprise regarding the benefits of a continuous parental model of newborn care which included the fathers. Knowing that the father was there to take care of the baby helped the mothers to rest and relax. At the point of reunion the mothers valued the

fathers' support because it was both a happy and exhausting experience for the mothers. This can be explored further from the perspective of a supportive environment. Previous studies have explored the father as a resource for both the mother and baby at the point of reunion after separation.^{1,2,17} Health care professionals with knowledge of the benefits of early newborn contact are a valuable resource to parents and can help create supportive environments.¹⁸ Other research has looked at alternative ways of creating supportive environments for caesarean section deliveries which are based on consensual, participatory approaches for all health care professionals and use multidisciplinary strategies.^{4,14}

The results of this study, which looked at the experience from the mother's perspective, highlighted how the continuous presence and care of the newborn by the father in the NICU was viewed positively by the mothers. This contrasts with the findings of a study undertaken in an Italian hospital regarding father's attitudes, beliefs and behavior immediately after the birth of their newborn infant.¹⁹ In that study, the fathers felt unprepared to take care of their newborns because of a lack of information about the birthing process and a lack of understanding about women's emotional responses to the birthing experience. The authors¹⁹ recommended that fathers should be targeted for educational interventions that equip fathers with the knowledge about normal birthing processes and an understanding about the needs of newborn infants. However, a recent study by Abraham, et al. contradicts these findings and suggests that bonding and attachment between father and infant is not about education and information but about being involved and responsible primary caregivers. The natural hormonal changes that women experience during pregnancy make them sensitive to their newborn baby. For fathers there are alternative pathways to compensate for the naturally evolving process that gives rise to maternal instinct and that is through active caregiving. This will happen to every father who becomes involved and responsible for the newborn as they enter into fatherhood.²⁰

This study identified one theme: 'a family friend practice after caesarean section'. It has identified the importance of healthcare professionals in providing a) a supportive environment and b) information about the benefits to the whole family of this simple but valuable health care intervention. This study shows the importance of a supportive environment and how this can be provided if healthcare professionals have insight into the familiarization process that is both natural and instinctive during the first hours after birth.^{4,14}

In this study, the mothers felt that the child recognized the voices of both parents naturally and instinctively. The result is consistent with the findings of a study by Velandia, et al.²¹ which describes the onset of vocal interaction. The study concluded that it is reasonable to encourage parents to maintain skin-to-skin contact with the newborn after caesarean section because it promotes early onset of vocal communication. Their

results showed that infants placed in skin-to-skin contact and who were exposed to the parents speech, initiated communication with soliciting calls within approximately 15 minutes after birth *via* caesarean section.⁷

The authors of this study wish caesarean section births to be “gentle” to the newborn and its parents.¹⁴ Our results suggest that a caring model of early newborn continuous contact with its parents immediately after caesarean section can make caesarean section a more “gentle” way of giving birth. In many societies around the world the infant and mother are together after birth, swaddled, not nude and fathers are not involved in childbirth.⁵ Taking cultural differences into account, continuous caring models involving skin-to-skin care immediately after birth should be seen as “good practice”.^{1,2,6,7,22} In a study by Velandia, et al.²¹ it was suggested that early mother-infant skin-to-skin care immediately after caesarean section should be encouraged until the first breastfeed takes place. However, if the mother is unable to provide skin-to-skin care immediately after birth, father-infant skin-to-skin care is a valuable alternative because it enhances paternal interaction. The findings of this present study support the suggestion of Velandia, et al.²¹

The mothers felt that during mother-infant separation ties were created between the father and the newborn, which supports findings of other studies in this area.^{8,23-25} Regarding benefits to the parents and family as a whole, the results of this study are consistent with a review and meta-synthesis of 29 original qualitative papers from 9 countries which explored the experiences of 401 mothers and 94 fathers.^{1,2} The paper presented a theoretical model of “becoming a parent under unfamiliar circumstances” which identified how parent’s growth and self-esteem makes them ready to assume responsibility for the newborn infant.^{1,2}

STRENGTH AND LIMITATIONS

95 mothers explained how important this caring model was for the entire family. The overall results of this study are consistent with the findings of previous literature reviews^{1,2} including smaller interview studies.^{23,24,26-28} This indicates that a comprehensive picture has been captured. The uniqueness of this study is the Chilean context and this means that the results can be transferred to other Chilean hospital contexts. With caution, this study can also be transferred to other hospital settings in middle income countries where newborn infants are separated from their mothers as part of routine care. However, further research is needed to identify physiological evidence relating to newborn morbidity and mortality especially in middle income settings.

The main limitation of this study was that only 95 mothers out of 130 agreed to participate and this may have led to bias; respondents may have provided a more positive attitude towards this model of care compared to those who declined to

participate. However, for a qualitative study, there were a large number of participants and during analysis of their responses saturation was reached. The first author’s (AA) involvement in the data gathering process could have affected the results through social desirability bias. Despite these limitations, measures were taken to strengthen trustworthiness. In order to ensure dependability, the data analysis was performed in a reliable way according to the design of the method.¹⁶ Regarding pre-understanding the first author is a nurse/midwife originally from Chile which strengthens credibility, meaning how well the results captured the reality being explored. Credibility was also enhanced by the other researchers who were not familiar with the setting as this added an external perspective. However, the original text was translated from Spanish to English which has its own limitations. Even though the researchers were familiar with both Spanish and English, the process of translation means that some of the original meaning may have been unintentionally distorted or misrepresented. However, Malterud¹⁶ was used as a suitable analysis method to deal with that issue. Additionally, the principal researcher, Ana Ayala (AA) double checked the original text parts with the interpreted condensed and translated text. Furthermore, a mutual understanding between the authors was obtained in each step of the analysis and pre-understanding has been bridled.

CONCLUSION AND CLINICAL IMPLICATION FOR PRACTICE

The model of early newborn contact could be stratified in the Chilean context specifically after complicated births or caesarean sections. Participating mothers agreed that this was an important health care intervention for the new family. Our results suggest that there is potential to increase the number of mothers and fathers who get to hold their baby sooner and for as long as they like in the first hours after birth with caesarean section. Parents can be informed about the benefits of this caring model when mother and infant are separated at birth. Further research with randomized control trials may support the biological advantages.

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CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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