6-1-2023

Mothers' experiences of a new early collaborative intervention, the EACI, in the neonatal period: A qualitative study

Charlotte Sahlén Helmer

Ulrika Birberg Thornberg

Thomas Abrahamsson

Evalotte Mörelius
Edith Cowan University

10.1111/jocn.16412
Helmer, C. S., Thornberg, U. B., Abrahamsson, T., & Mörelius, E. (2023). Mothers' experiences of a new early collaborative intervention, the EACI, in the neonatal period: A qualitative study. Journal of Clinical Nursing, 32(11-12), 2892-2902. https://doi.org/10.1111/jocn.16412

Received: 16 March 2022 | Revised: 23 May 2022 | Accepted: 25 May 2022

DOI: 10.1111/jocn.16412

Journal of Clinical Nursing WILEY

ORIGINAL ARTICLE

Mothers' experiences of a new early collaborative intervention, the EACI, in the neonatal period: A qualitative study

Charlotte Sahlén Helmer RN, RN Pediatric and Neonatal nursing, PhD-Student[1,2] | **Ulrika Birberg Thornberg PhD in psychology, Lecturer and Clinical Neuropsychologist**[3,4] | **Thomas Abrahamsson MD, PhD, Associate Professor, Neonatologist**[2,5] | **Evalotte Mörelius RN, MSc, PhD, Professor of Nursing Children and Young People**[1,6,7]

[1]Division of Nursing Sciences and Reproductive Health, Department of Health, Medicine and Caring Sciences, Linköping University, Linköping, Sweden

[2]Crown Princess Victoria Children´s Hospital, Linköping University hospital, Linköping, Sweden

[3]Department of Rehabilitation Medicine, and Department of Health, Medicine and Caring Sciences, Linköping University, Linköping, Sweden

[4]Division of Psychology, Department of Behavioural Sciences and Learning, Linköping University, Linköping, Sweden

[5]Division of Children's and Women's Health, Department of Biomedical and Clinical Sciences, Linköping University, Linköping, Sweden

[6]School of Nursing and Midwifery, Edith Cowan University, Joondalup, Western Australia, Australia

[7]Perth Children's Hospital, Nedlands, Western Australia, Australia

Correspondence
Charlotte Sahlén Helmer, Division of Nursing Sciences and Reproductive Health, Department of Health, Medicine and Caring Sciences, Linköping University, S-581 83 Linköping, Sweden.
Email: charlotte.sahlen.helmer@liu.se

Funding information
Barnets lyckopenning; Region Östergötland; Stiftelsen Sven Jerrings Fond

Abstract

Aim: To explore mothers' experiences of the EArly Collaborative Intervention.

Background: Preterm birth puts a considerable emotional and psychological burden on parents and families. Parents to moderate and late premature infants have shorter stays at the neonatal intensive care unit and have described a need for support. The EArly Collaborative Intervention was developed to support parents with preterm infants born between gestational Weeks 30 to 36. In this study, mothers' experiences of the new intervention were explored.

Design: A qualitative design guided by a reflexive thematic analysis according to Braun and Clarke. Interviews were individually performed with 23 mothers experienced with the EArly Collaborative Intervention. Data were identified, analysed and reported using reflexive thematic analysis. The COREQ checklist was used preparing the manuscript.

Results: Two main overarching themes were constructed. The first theme, 'mothers' feelings evoked from the EArly Collaborative Intervention' describes the emotions raised by the intervention and how the intervention affected their parental role. Their awareness of the preterm baby's behaviour increased, and the intervention helped the parents to communicate around their baby's needs. The second theme, 'based on the preterm baby's behavior', describes experiences of the provision and the learning process about their preterm baby's needs and communication. The intervention was experienced as helpful both immediately and for future interaction with the baby.

Conclusions: Mothers found the intervention to be supportive and encouraging. They came to look upon their baby as an individual, and the new knowledge on how to care and interact with their baby affected both their own and their baby's well-being. Furthermore, the intervention felt strengthening for their relationship with the other parent.

Relevance to Clinical Practice: The EArly Collaborative Intervention can support parents' abilities as well as their relation to their baby and may thereby contribute to infant development, cognition and well-being.

KEYWORDS
behaviour, communication, family, human development, infant care, intervention, learning, mothers, parenting, premature infant

1 | INTRODUCTION

The strain preterm birth puts on parents is well documented and has been described in terms of shock, helplessness and loss of control (O'Donovan & Nixon, 2019). Mothers have expressed feelings of alienation both towards their preterm infant but also towards the own body due to the inability of sheltering the infant from preterm birth (Spinelli et al., 2016). Distress, depression, anxiety, sleep disorder and isolation are well-known complications (Mäkelä et al., 2018) that further affect transition to the mothering role (Heydarpour et al., 2017; Spinelli et al., 2016). Mothers of preterm infants are exposed to stress related to the preterm birth (Al Maghaireh et al., 2016; Caporali et al., 2020) and this stress can be prolonged and persisting until the child reaches school age or beyond (Polic et al., 2016). Good maternal psychological and emotional health and a sensitive maternal behaviour during infancy provides a robust foundation for the child's development of a secure attachment pattern as well as later psychological (Ainsworth et al., 1978; Hall et al., 2015) and cognitive development (Deans, 2020; Rocha et al., 2020; Walsh et al., 2019), wherefore consideration of maternal feelings and experiences after preterm birth is of importance.

In the neonatal intensive care unit (NICU), much focus is on the infants' at most risk for morbidity (Manuck et al., 2016), with the risk of leaving parents of infants with lesser health problems without enough support. Still all parents in the NICU, irrespectively of their infants' gestational age at birth, need a variety of support for parental well-being (Caporali et al., 2020; Treyvaud et al., 2019). Previous studies have recently described informational and practical needs as well as for staff to be sensitive and able to adjust the support to different parental prerequisites (Adama et al., 2021). Moreover, parents felt empowered and in control when they were able to take care of and interact with their preterm infants (Brødsgaard et al., 2019; Treherne et al., 2017) and how staff support helped them feel secure (Ochandorena-Acha et al., 2020).

In a review by Zhang et al. (2014), early interventions were shown to positively affect maternal anxiety and depressive symptoms as well as mothers' ability to handle the situation of having a preterm infant. Furthermore, shortened hospital stays and an increase in breastfeeding rates were positive outcomes regarding the infant (Zhang et al., 2014). In a review on parenting style, the importance of parental responsivity was highlighted as the most important approach in parenting for improving preterm infants' cognitive and behavioural development later in life (Neel et al., 2018). Various interventions have focused on supporting parent–infant relations (Puthussery et al., 2018); however for an intervention to be successful, parents need to find the intervention relevant, comprehensive and valuable (Terwee et al., 2018).

What does this paper contribute to the wider global clinical community?

- This study highlights the importance of collaborative guidance for the experience of becoming a mother after having a preterm infant.
- The early collaborative intervention positively affects the possibility for mothers to be aware of the benefits of their interaction with the preterm infant.
- Through dialogue with the nurse, mothers expressed how they develop a common language together with the other parent for the preterm infants' behaviour and needs, which positively affects their communication and relation with each other.

The EArly Collaborative Intervention (EACI) program is a new early intervention, developed to support interaction between parents and their preterm infants (Helmer et al., 2021). The intervention along with the theoretical framework is described previously (Helmer et al., 2021), and a summary is outlined below. Key components of this new intervention are that it starts early in the NICU, within 3 days of the preterm infant's birth, and it is tailored to suit infants born between gestational Weeks 30–36. These infants have a shorter hospital stay compared to infants born more preterm, and their parents soon have the main responsibility for their preterm infant's care. Since preterm infants' cues are more immature and less robust compared to full-term infants, parents need support to interact with their infants in an individualised way being attentive and responding to the cues.

Another important component is the collaboration between the preterm infant, the parents and the EACI-provider during the intervention. They are all contributors in the way that the intervention builds on the preterm infant's reactions and cues and the parents' knowledge and experiences. The EACI is a parallel support of both the preterm infant and the parents with two important elements. One of them is the informational guidance where

the provider gives information to the parents on for example the preterm infant's cues like breathing irregularities, small movements and self-balancing capacity. In this element, the preterm infant's capability and need for interaction is put into words by the provider, while the parents are caring for their infant for instance when feeding or changing the nappy. By naming the cues, they become visible for the parents. The provider also informs what to expect from the preterm infant presently and emerging, which is a way to comfort the parents and furthermore help them having realistic expectations on their preterm infant's behaviour and development. The other element is that along with the informational guidance, the provider gives hands-on guidance by raising awareness of the preterm infant's subtle cues in the very moment. The EACI-provider instructs the parents on how to respond, interact, touch, lift and support their infant instantly. In this way, the preterm infant immediately gets tailored support by the parents. Parents may, for example, be asked to come closer to the preterm infant's face to facilitate eye contact or shown how they can support their infant's position with their hands.

A further key component is that during an EACI one EACI-provider informationally and practically guides one family at a time when both parents are present. Parents are involved and encouraged to describe their infant's behaviour, and their description is much-valued information. By listening to, observing and interacting with the parents and the preterm infant the EACI-provider can tailor the guidance to suit the family's needs.

The intervention consists of three sessions, where the two first session are provided at the NICU and the last intervention is provided when the infant is full-term, in the family's home after discharge from the hospital. It is the parents' needs and the state of alertness of the preterm infant that decides during which time of the day the EACI is provided.

During the EACI, the provider takes notes and afterwards creates a short-written summary of the behaviour and needs of the preterm infant with suggestions on how the parents continuously can provide individualised, tailored care for their infant. The summary is maximum two pages. Photographs are often taken of the preterm infant and the parents during the EACI. These are added to the written summary, for the parents to easier recall details from the session. An example of a written summary is supplemented with the published detailed description of the EACI (Helmer et al., 2021). As the EACI is a new intervention, a randomised controlled study is currently in progress to evaluate the quantitative effects of the program. However, before implementation in the NICU, there is also a need to explore mothers' experiences of the EACI.

2 | AIM

The aim of this study was to explore mothers' experiences of the EACI.

3 | METHODOLOGY

3.1 | Study design

The design used was an explorative qualitative design guided by reflexive thematic analysis according to Braun and Clarke (2006, 2019). The thematic analysis is a flexible way to analyse qualitative data (Braun & Clarke, 2006) and the method was chosen as it was appropriate for the aim and for using subjectivity in the analytic process. Our approach to the data was with a constructionist epistemology as we understand the context from our own standpoint and are constructing research within the context we work (Braun & Clarke, 2013). Interviews were used to produce data. When interpreting the data, an inductive orientation was applied. The Consolidated criteria for reporting qualitative studies (COREQ) (Tong et al., 2007) was used when developing and reporting methods and findings (see Data S1).

3.2 | Participants

Inclusion criteria were mothers participating in a randomised trial evaluating EACI (ClinicalTrials.gov NCT02034617) allocated to the intervention group. Mothers were recruited face-to-face between February 2014 and January 2017. Twenty-three mothers, who had received the intervention, were from the start of the trial consecutively approached at the NICU and asked for participation. They all agreed to participate and were interviewed. Their babies were born between gestational Weeks 30 + 5 and 35 + 5, with a median of 35 gestational weeks, 20 of them were singletons. Most mothers stated the babies had a fairly uncomplicated hospital stay, meaning few medical complications apart from prematurity. The mothers were between 25 and 49 years old, median 36 years old. For 10 mothers, the preterm baby was their second, third or fourth child. All but one mother lived together with the other parent. No mothers dropped out from the study.

3.3 | Data collection

The face-to-face interviews were performed individually approximately 4 months after receiving the last intervention, at a time suitable for the mothers. The interviews were preceded with small talk and performed individually and audio-recorded in the families' homes. The interviewer called the parents and arranged for the home-visit ahead of the interview. The interviews lasted between 10 and 45 min with a mean of 24 min. At the time for the interview, the preterm baby was present and sometimes siblings. One interview was paused for a short time as the mother had to breastfeed. The interviews were performed by a research assistant who is also an experienced paediatric nurse working at the NICU were the families had been cared for. She was not part of the intervention-team, nor

did she take part in the data analysis or the authorship. The questions aimed to capture the extent of the EACI experience, in an open-ended, format with questions such as: 'Can you tell me about your experiences of the intervention?' and 'Can you describe what happened during the intervention?' and 'Describe the information you got during the intervention?' Probing, responsive questions, following the mothers' narratives like: 'What do you mean with …?' 'Tell me more …?' were used to elaborate on their described experiences as well as letting them describe the situation more in detail. The interview guide was not pilot tested, still discussed, reflected on and redesigned prior the interviews. The interviews were later transcribed verbatim by the first author.

3.4 | Setting

The NICU where the mothers have been provided with the EACI is a family-centred 16-cot level three ward, single-room unit where usually late and moderate preterm infants are cared for in a family room, the parents being the primary caregivers. In the large family rooms, there are two beds for parents, a bed for the infant, reclining chairs and a refrigerator for the infant's feeds. In the NICU there is a kitchen where the parents can arrange meals. There is also a family area where they can meet friends and relatives. In the family rooms it is possible for siblings to stay the night as well. The EACI was provided by staff working in the NICU and certified in the Newborn Individualised Developmental and Care Assessment Program (Als, 1986). As there is a well-functioning hospital-based home care for these families, in-patient care is often shortened, and the families have the responsibility to care for their preterm infant by themselves soon after delivery.

3.5 | Analysis

The transcribed data were identified, analysed and reported with reflexive thematic analysis in accordance with Braun and Clarke (2006, 2021a). The analysis was created when working with the data for an extended time through a continuous reflective approach as described by Braun and Clarke (2019). Data were organised manually using Microsoft Word®. During transcription of the interviews, the coder got familiar with the mothers' experiences expressed during the interviews. Initial notes were made in the data where there were parts of special interest. The transcripts were then cross-checked with the audio-recordings. When all the interviews were transcribed verbatim, the items were read through, all of them given the same attention. The data in the interviews corresponding to the aim were seen as the dataset (Braun & Clarke, 2006). The dataset was read repeatedly, and more notes were made in the data to prepare for coding. Meaningful information describing the mothers' experiences, codes, was generated, grouped and regrouped together. The coding was a fluid process with codes being divided and collapsed, as the data were reread for several times and new insights developed. Potential initial themes were constructed created through identification of patterns within the dataset. Themes were then reorganised and shaped during the continuing process of analysing. The first author read, coded and generated the themes. The other authors reflected and collaborated on the analysis along the way. A thematic map was developed to let the themes reflect and capture patterns and meanings in the codes, and data were finally reported. During the reflexive thematic analysis meaning making is made though interpretation wherefore there is always the ability for new insights (Braun & Clarke, 2021b). The concept of saturation is not applicable in this reflective approach according to Braun and Clarke (2021b). However, according to Malterud et al. (2016), during analysis the data were found to contain information saturation enough to explore mothers' experiences of the EACI.

3.6 | Reflexivity

The first author is a female paediatric and neonatal nurse (RN, PhD student), still employed at the NICU and part of the team undertaking the intervention at the unit. The second author is a clinical psychologist (PhD), a lecturer and a researcher in developmental psychology. At the time for the study, she was part-time employed at the children's hospital. The third author is a male neonatologist (MD, PhD), a researcher in neonatology, and still employed at the NICU. The last author (RN, PhD) is a female professor in nursing (children and young people). She has many years of experience of working in the NICU but was at the time for the study employed by the University. The authors thereby understood the data from their perspectives. The knowledge about the care, the context and the intervention is one way for understanding the responders' part in the collaboration and the EACI-session. Although using the pre-understanding of the intervention and the neonatal context, the data from the interviews were analysed to form the findings. The four authors' perspectives were discussed during the analysis and the reporting. The emphasis was to be aware of one owns perspective, and with different perspectives read the data and actively enhance reflexivity. The authors have knowledge in how different interventions can support parents in caring for their preterm infant and have recently evaluated how skin-to-skin contact (SSC) affected interaction (Helmer et al., 2020). As SSC could not be identified as an intervention clearly improving interaction, the authors identified a need for another way to support interaction between these vulnerable dyads. Furthermore, an intervention possible to implement in an environment is known by the authors.

3.7 | Ethics considerations

The study was performed in accordance with the Declaration of Helsinki ('World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects,'

World Medical Association, 2013), and Ethical approval to conduct the interviews was obtained from the Regional Research Ethics Committee in the relevant city, registration number 2013/367-31. The mothers received written information about the study where the name of the responsible researcher and reasons for doing the research were included, together with verbal information. They signed an informed consent form prior to engagement in the study. If during the interview the mother would express a need for professional support, due to memories arising from discussion around the hospital stay, the nurse conducting the interviews was prepared and a social worker at the unit could arrange a meeting with the mother. However, no needs of extra support from a social worker emerged.

4 | FINDINGS

Two main overarching themes were constructed by reflecting on the data. The first theme, 'mothers' feelings evoked from the EACI' describes the feelings evoked from the guidance. The second theme, 'based on the preterm baby's behavior', describes how they experienced the EACI to be provided. Both overarching themes included subthemes. Quotes are reported using a participant number. In the quotes, the preterm babies' names are fictitious.

4.1 | Mothers' feelings evoked from the EACI

4.1.1 | From scepticism to relief in a vulnerable position

To be at the NICU with their preterm baby raised feelings of being in a vulnerable situation. The mothers described feelings of having a fragile preterm baby and of being thrown into an unwanted situation. Ahead of the EACI, some mothers were hesitant to participate in the EACI. They wanted to do their best but felt uncomfortable not knowing what to expect and were furthermore nervous, being observed and judged by professionals. There was also a fear that the EACI would be an extra burden in an already stressful situation.

> I felt that I was like already so tired, and I never got any peace and quiet and then there was something to do, something [EACI] and right then I felt like no, goodness this is too much, just leave me be
>
> Participant 10

The sometimes-crowded intensive care room could make it difficult to interact with both the EACI-provider and the baby and to discuss the preterm baby's needs on top of this was too much. At the same time, the instant feedback from the EACI-provider brought feelings of tranquillity and relief as the EACI was not about being observed and judged, but about being supported. Thus, the situation felt comfortable, and afterwards mothers felt they acted, as they would have done without anyone observing and guiding them.

> It didn't feel like there was someone critically watching, more like just watching, and then giving a response, or tips or something. And then it felt a bit calmer.
>
> Participant 6

Mothers felt calm when the EACI-provider ahead of starting up an EACI described what was going to happen, that the early support was not for pointing out what was wrong, but to find out what would be helpful for their preterm baby and to focus on this. Even though the preterm baby had capabilities that were maybe obvious for everyone, the mothers appreciated that the providers highlighted this. As the preterm baby had the lead role and the discussion regarding the baby's behaviour was the main topic, the mothers felt the pressure on their own capability to be of minor importance.

The EACI was delivered at the hospital and in the families' homes after discharge. To invite a nurse, they had perhaps not met before into their home, could be uncomfortable to start with. Nevertheless, as the focus was on their baby and how to adjust the environment at home to suit the needs of their baby, it turned out to be helpful. Compared to the EACIs in the hospital, the mothers felt the EACI after discharge was less formal.

4.1.2 | To see the baby as a unique individual

The extra time spent together with the provider compared to time spent with other staff that sometimes had to forsake the family for other families' needs, felt as a foundation for reflection on their preterm baby's behaviour. Mothers expressed that the EACI highlighted the importance of sensitive care of the preterm baby and how their interaction with their baby felt essential. It became obvious this was fundamental for the relationship with their baby and their views about their baby changed. The preterm baby became more of a unique individual to them with individual needs.

> He was just a baby that one didn't really know, with the feedback from the interventions, then it becomes more like, yes, this little person, he wants it this way and so we need to be more observant at he like wants it in this or that way… we thought that he was just like this is a baby, a little bit like that, without that Henrik is an individual person.
>
> Participant 12

The EACI created time and space to focus on the baby, time to devote exclusively to their baby instead of daily matters. Mothers experienced that the new knowledge regarding preterm babies' behaviour

and needs made them realise how a change in their care affected the babies' behaviour and alertness. To be both physically and emotionally close to the baby facilitated awareness of their preterm baby's subtle cues and their delicate ways to interact such as looking at the parent and holding tightly onto a finger.

> You think about how you're there with the baby so that she feels safe and such, that it's important that you talk to them as well, that they know that you are there the whole time so that they are safe with you, it's good for them and you realize at any rate, you think about how you are with the baby.
>
> Participant 23

There were insights in the complexity of how the preterm birth affected the baby. Despite the baby's tiny appearance, there was a fascination of how the preterm baby was able to express so much. The understanding in how the adjustments in their provided care affected the baby was helpful for them in continuously adapting their care according to their baby's needs. Thus, when their preterm baby became more robust, they provided less support.

4.1.3 | A growing trust for oneself as a parent

In the beginning, mothers felt anxious in caring for their preterm baby, afraid of doing things wrong. Feelings of being heavy-handed and confused together with feelings of stress and frustration evoked because of the unknown situation. So, the guidance from someone having the time to stand beside carefully pushing and confirming what was being observed, made the mothers dare to care for their babies themselves. There was someone professional nearby who had control of the situation, that made the mothers feel capable in taking own decisions regarding their preterm baby's care. The feelings of being able to take care of and interact with their preterm baby was supported by the way the provider guided them. The trustful relation with the EACI-providers made it easier to communicate about the preterm baby. Being reassured in what had been seen by themselves, but something they hesitated to trust themselves in, made them grow in their motherhood. The mothers felt positively reinforced to focus on what worked for their preterm baby.

> That is, that the things I do, they work for Otilia, that there is someone else who sees it, that there is someone that sees that she is calm, or that she is having that interaction with me, that eh… yes notice it, that the things I do work for her that there is someone else who says it and can see, that has been… nice. And that there is someone who says what you can do as well, you do more… and think that next time you do it like that because someone else has explained it.
>
> Participant 1

Through the guiding mothers learnt that there could be alternative ways of doing things, and they were praised and encouraged to think of the best alternative for their families. They expressed a will of doing their best for their preterm baby and experienced the guidance to be raised from their specific needs, that their thoughts were listened to and that suggestions for care were created out of this. Moreover, they felt encouraged in how they were able to provide well-being for their preterm babies and how this created feelings of competence and satisfaction in their motherhood.

> A feeling that is really good because you're developing too, you move forwards in some way as a parent with that feeling, both being proud of your baby and also in how you are responding to your baby yourself
>
> Participant 9

The mothers' feeling of a growing confidence in caring came from the incorporation of knowledge learnt from the EACI. The guiding was provided in a way that helped the parents as well as the preterm baby to relax and create a context were the mothers were able to enjoy their preterm baby. Their own feeling of being safe affected the preterm baby positively and made the baby more satisfied and less stressed.

> We have got that knowledge to give him a little extra support and peace, and yes extra support to get off to a god start adapted as he was born a little early mm… so I believe that… yes, the adaptions we made have helped as they have given him more calm, more rest, a bit less stress.
>
> Participant 11

The EACIs at the NICU made transition home from the hospital easier. To be discharged from hospital led to feelings of distress but at the same time they felt boosted with ideas of how they could provide the same individualised care at home. Moreover, the guidance had made the mothers more secure when it came to changes in their baby's behaviour as well as to navigate differing advice from others regarding their baby. The EACIs were expressed to make the parents reflect together over their baby's needs and behaviour. These mutual reflections, starting early in the NICU, were helpful not only for the baby but for the parents' relationship too. The experience of sharing a language during the EACI led to feelings of being a well-functioning parental team. The shared language further made it easier for the parents to discuss their baby's needs, when they were discharged from the NICU.

4.2 | Based on the preterm baby's behaviour

4.2.1 | In a guiding dialogue

During the EACI the preterm baby's behaviour was observed and vocalised to them by the provider. This made it easier for the

mothers to adapt to their baby's cues. At the same time, the EACIs were a time for discussing the preterm baby's needs in a very natural context. The conversation dealt with practical arrangements of the environment surrounding the baby. How the bed space could be prepared to comfort the preterm baby or how the baby's body and senses could be supported to let the baby be able to breastfeed or to rest. The conversation was experienced to be more reflective and deeper compared to conversations with other staff at the unit.

> It felt you know really good to have someone to discuss things with that you wouldn't have otherwise if they [EACI-provider] hadn't been there
>
> Participant 8

The EACIs took place when the parents cared for their baby and the EACI-provider was explaining and pointing on important cues of the preterm baby as well as giving hands-on support, like adjusting the infant's position, if needed. Together, the parents and the provider looked for the baby's cues of stress and well-being. The mothers were guided in how to support the baby by being present in the moment and to comfort their baby with their well-known voices. Guiding questions from the provider were seen as a way of raising awareness of cues that had been invisible for the parents thus, guiding the parents to further improve their caretaking. The preterm baby's subtle cues for interactive behaviour were noticed by the provider, and the mothers were delighted realising their baby wanted to have closer contact with them. During the EACI, focus was on their relationship with the preterm baby and the mothers expressed how respect was shown when an often-brief moment of connection with their preterm baby was established. The ongoing discussion was then continued afterwards.

At the same time, the EACI was an opportunity to ask questions and get an immediate response from the provider and if needed, adjust the care.

> ...he felt insecure or something, there were good explanations for his behavior both during and after and she could say that yes, when he did this, or that then you did this, did you notice how he responded to that, or did you notice how he reacted when you spoke to him so, it... it was very important of course as it was hard to understand the baby at the start, so you don't know... yes what he is showing and what he wants.... So it was good.
>
> Participant 16

The preterm baby's and the parents' development since the birth was summarised at the EACI at home along with new questions discussed regarding the behaviour of the baby, now being full-term but still affected by the preterm birth. Furthermore, this EACI was a time for discussing the near future and coming needs for the baby.

4.2.2 | A moment for learning

During an EACI mothers learnt about what preterm birth implies for preterm babies in general and for their baby. This knowledge filled a gap in relation to their own perceived understanding. The unexpected situation of becoming a parent to a preterm baby was eased since the EACI provided the mothers with useful information about the baby and the typical development for a preterm baby.

> You got a great deal of really worthwhile information as you sat and talked and bathed and so it wasn't just that we talked, it was that we also came into talking about... other things too and even thoughts that we had and we got a lot of information about what it means to be born prematurely, maybe what it means for him that yes, but this and that are maybe not fully developed compared to a full-term baby... I think we learnt a great deal.
>
> Participant 16

The explanations of the preterm baby's cues were useful for the understanding both immediately and after the EACI. The mothers learnt how changes in provision of care could improve their babies' well-being and they began to trust their baby to signal their needs. The EACI was also about confirming what already worked well in relation to the baby and what to expect next from their baby. The mothers expressed the younger the preterm baby, the more useful the guidance as the preterm baby then was perceived to be more difficult to interpret. Moreover, there were thoughts on how the knowledge from the EACI helped the preterm baby, as the baby did not have to 'teach' the parents.

4.2.3 | A support to recall

The written summary made by the provider after the EACI was sometimes perceived clearer and easier to grasp then the guidance during the EACI, as there then was time to reflect individually. The summary gave the parent couples a possibility to discuss with each other and were a helpful tool for caring situations further on. It served as a reminder of what happened during the EACI, and parents used it to refresh the dialogue. There was an openness in that changes in how the text was formulated could be done if the parents felt a need for this. The mothers experienced how the written summary emphasised the importance of the parent–baby interaction and how the interaction sometimes was easier to visualise when reading the written summary.

> It feels simply nice to be able to see on paper how others experienced it and to see that you have that interplay with the baby, that you maybe haven't really seen yourself.
>
> Participant 9

Furthermore, mothers appreciated the summaries for having a positive tone regarding the baby and themselves. The summary made them proud of their care of their baby. Moreover, it was something that could be shared with relatives who had not been able to be part of the preterm baby's start in life, but also something to show the child when getting older.

5 | DISCUSSION

This study explored mothers' experiences of the EACI. Their main experience was that EACI increased their awareness of their preterm baby's behaviour and needs. Moreover, it strengthened their parental abilities and facilitated the parents' communication about their baby both in the NICU and after discharge from hospital.

It has earlier been described how routines in the NICU and parental restrictions in care affect parents' feelings of their preterm infant and themselves (Treherne et al., 2017). In this study, the EACI helped the mothers dare to care for their preterm baby as they were reassured and practically shown how to take care of and interact with their baby in a suitable way. Moreover, they described how they were encouraged to think for themselves of alternatives that would suit their baby the best. To be able to make decisions for one's infant has earlier been described by mothers as something supporting feelings of being close and connected to the preterm infant (Kearvell & Grant, 2010; Treherne et al., 2017).

Mothers of preterm infants have described how they are facing a parenting role differing from the one expected and feelings of not being connected with their preterm infant (Al Maghaireh et al., 2016; O'Donovan & Nixon, 2019; Spinelli et al., 2016). It is therefore essential to support parent–infant emotional closeness. Emotional closeness is facilitated when parents can be engaged in caring for the preterm infant and when they feel valued and important as parents in the NICU (Thomson et al., 2020). In our study, the mothers described how the EACI helped them to look upon their preterm baby as a unique individual, not just a baby they had a responsibility to care for. Parents have described how infant responsiveness made them feel emotionally connected with their preterm infant (Thomson et al., 2020). During the EACI, ways on how parents can be attentive to their preterm infant's cues are highlighted which in turn can support mutual communication between the parents and the preterm infant. The mothers in this study noticed how both to be physically and emotionally close to the baby were central for their relationship with the baby. Emotional closeness is a foundation for parent–infant bonding and thus of great importance momently as well as long-term to support a healthy relationship and a healthy child (O'Higgins et al., 2013). Moreover, to early on see, interpret and respond to the infant in a sensitive way is a foundation for the attachment process (Bowlby, 1969) and feelings of knowing how to do it may strengthen maternal confidence in caring.

During the EACI, the mothers expressed how they got an increased understanding of the preterm babies' communication when having the opportunity to discuss this. Some expressed they had seen the behaviour by themselves ahead of the EACI, but they did not always know what it meant or what they would do to respond to it. In this family-centred NICU, individualised support was sometimes difficult to provide due to staff workload. The fact that the provider had devoted time to spend with the family made a foundation for a trustful relation between parents and provider, a space where a mutual exchange of thoughts and reflections could take place. It is of high importance to continue to ensure parents get time and opportunity to learn to know and respond to their babies' individual needs before discharge from the NICU. For that reason, healthcare services should facilitate family-centred neonatal care including opportunities for physical and emotional closeness and guided individualised family support to meet this necessity. Effective support to parents in the NICU includes well-delivered information, practical support and a context supporting parental participation in care (Adama et al., 2021; Thomson et al., 2020). Furthermore, the importance of staff being knowledgeable in how to emotionally comfort parents and create a well-functioning relationship with parents as this will increase parental confidence and well-being (Adama et al., 2021). Still these fully understandable needs are sometimes difficult to meet in a busy NICU context and if so, increased nurse to patient ratio may need to be established.

In concordance with other studies on interventions targeting parent–infant relations (Borghini et al., 2014), the mothers experienced security and less stress when provided with the EACI. Parental stress after preterm birth differs between mothers and fathers and is prolonged after discharge (Schmöker et al., 2020). A meta-analysis has pointed out the effect of family-centred interventions for reducing preterm parental stress, but a need for intervention programs to have a broader focus than purely the development of the preterm infant (Sabnis et al., 2019). EACI is a family-centred intervention suitable for this purpose since the mothers experienced the EACI as a way to handle the stress, to get in control over the situation. Moreover, the experience of safety and having control of the situation was expressed to affect their preterm babies in the way that they became less stressed as well. Feelings of being in control have earlier been described by other NICU parents as important for their capability to cope with the situation (Lasiuk et al., 2013).

Another important aspect the mothers expressed was that the EACI helped the parents to get a common language when reflecting together as a couple on what was observed and discussed. To become a parent to a preterm infant is for most parents an unexpected role (Heydarpour et al., 2017; Lasiuk et al., 2013) and a reorientation in the family is needed (Widding et al., 2019). The feeling of being able to cope together could be strengthening for the parental couple and for the family context. Previous studies have shown improvements in parents' perceptions of their relations when sharing more of the responsibility for the care (Mörelius et al., 2015).

This study was part of a larger project evaluating the EACI. To do so, a timeframe when EACI would be provided was set based on the importance of an early component (Puthussery et al., 2018) to make a behavioural difference. Thus, the first EACI was provided within 72 h after the preterm infant was born. However, at

the time of the first EACI, the mothers in this study described feelings of being in a vulnerable position. Even if this was not clearly expressed by the mothers, it is possible that 72 h was too early for some families due to post-delivery health-conditions and the often-stressful situation for the parents (Ionio et al., 2019). At the same time, the early need for guidance was highlighted by the mothers as the preterm baby then was perceived to be more challenging to understand. Since some families may have benefitted from having a few more days to recover, it is possible the timeframe should be adjusted to suit the families' individual needs in the future.

5.1 | Limitations

One limitation with this study may be the timeframe of 4 months passing since the mothers received the EACI. It might have affected the mothers' recalled experiences to be overall positive. The findings in this study show that the mothers were positive to the EACI and there were few negative comments or suggestions for improvements. However, this is in accordance with previous studies of parents with preterm infants participating in an intervention (Baraldi et al., 2020; Ettenberger et al., 2017; Ochandorena-Acha et al., 2020). If given extra support in a vulnerable situation, it might be obvious to expect parents to feel encouraged and empowered. Especially since 13 of the 23 participants in our study were first-time mothers. This could explain wherefore EACI with its individualised support component might have been extra valued. Another limitation is that inclusion was limited to the birth-giving mothers. In the future, it is of importance to include partners too, to broaden the perspectives and learn about their experiences of EACI since they were also part of the intervention.

6 | CONCLUSION

This study shows that mothers found the EACI to be a support of relevance for their situation being mothers of preterm babies. The guidance was experienced to be encouraging and supportive and given in a relaxed and trustful way. This helped the mothers to look upon their baby as a unique individual, and to see how their caring and interacting with the preterm baby, using the baby's communication as a starting point, was useful and made a difference for their baby. The EACI was furthermore experienced to help the parent couples getting a mutual language and to reflect on their baby's behaviour and thereby strengthen their parenthood.

7 | RELEVANCE TO CLINICAL PRACTICE

During the EACI, a mutual trustful relationship between EACI-providers and parents can be created, where parents can learn about their preterm baby's behaviour and individual needs. This can make parents feel supported and safer in their parental role. The improved parental confidence and parent–infant interaction may contribute to a situation supporting infant development, cognition and well-being.

ACKNOWLEDGEMENTS

We want to thank the mothers for their willingness to share, Poonam Ejhed for conducting the interviews and Gemma Safikhani Kashkooli for language editing. The authors are grateful for the funding from Region Östergötland, Barnets Lyckopenning and Jerringfonden. The last author gratefully acknowledges Perth Children's Hospital Foundation for supporting the professorial chair position. Open access funding enabled and organized by ProjektDEAL.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interests.

DATA AVAILABILITY STATEMENT

Data available on request from the authors

ORCID

Charlotte Sahlén Helmer https://orcid.org/0000-0003-3621-4580
Ulrika Birberg Thornberg https://orcid.org/0000-0002-6972-3413
Thomas Abrahamsson https://orcid.org/0000-0002-0190-8294
Evalotte Mörelius https://orcid.org/0000-0002-3256-5407

TWITTER

Charlotte Sahlén Helmer @CharlotteSahlen

REFERENCES

Adama, E. A., Adua, E., Bayes, S., & Morelius, E. (2021). Support needs of parents in neonatal intensive care unit: An integrative review. *Journal of Clinical Nursing*, *31*(5–6), 532–547. https://doi.org/10.1111/jocn.15972

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment. A psychological study of the strange situation*. Psychology Press.

Al Maghaireh, D. F., Abdullah, K. L., Chan, C. M., Piaw, C. Y., & Al Kawafha, M. M. (2016). Systematic review of qualitative studies exploring parental experiences in the neonatal intensive care unit. *Journal of Clinical Nursing*, *25*(19–20), 2745–2756. https://doi.org/10.1111/jocn.13259

Als, H. (1986). A synactive model of neonatal behavioral organization: Framework for the assessment of neurobehavioral development in the premature infant and for support of infants and parents in the neonatal intensive care environment. *Physical & Occupational Therapy in Pediatrics*, *6*(3/4), 3–53. https://doi.org/10.1080/J006v06n03_02

Baraldi, E., Westling Allodi, M., Smedler, A.-C., Westrup, B., Löwing, K., & Ådén, U. (2020). Parents' experiences of the first year at home with an infant born extremely preterm with and without post-discharge intervention: Ambivalence, loneliness, and relationship impact. *International Journal of Environmental Research and Public Health*, *17*(24), 9326. https://doi.org/10.3390/ijerph17249326

Borghini, A., Habersaat, S., Forcada-Guex, M., Nessi, J., Pierrehumbert, B., Ansermet, F., & Müller-Nix, C. (2014). Effects of an early

intervention on maternal post-traumatic stress symptoms and the quality of mother-infant interaction: The case of preterm birth. *Infant Behavior and Development*, *37*(4), 624–631. https://doi.org/10.1016/j.infbeh.2014.08.003

Bowlby, J. (1969). *Attachment and loss (vol. 1 attachment)*. Basic Books.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners* (1st ed.). SAGE publications.

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, *11*(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806

Braun, V., & Clarke, V. (2021a). Conceptual and design thinking for thematic analysis. *Qualitative Psychology*, *9*(1), 3–26. https://doi.org/10.1037/qup0000196

Braun, V., & Clarke, V. (2021b). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise & Health*, *13*, 201–216. https://doi.org/10.1080/2159676X.2019.1704846

Brødsgaard, A., Pedersen, J. T., Larsen, P., & Weis, J. (2019). Parents' and nurses' experiences of partnership in neonatal intensive care units: A qualitative review and meta-synthesis. *Journal of Clinical Nursing*, *28*(17–18), 3117–3139. https://doi.org/10.1111/jocn.14920

Caporali, C., Pisoni, C., Gasparini, L., Ballante, E., Zecca, M., Orcesi, S., & Provenzi, L. (2020). A global perspective on parental stress in the neonatal intensive care unit: A meta-analytic study. *Journal of Perinatology*, *40*(12), 1739–1752. https://doi.org/10.1038/s41372-020-00798-6

Deans, C. L. (2020). Maternal sensitivity, its relationship with child outcomes, and interventions that address it: A systematic literature review. *Early Child Development and Care*, *190*(2), 252–275. https://doi.org/10.1080/03004430.2018.1465415

Ettenberger, M., Rojas Cárdenas, C., Parker, M., & Odell-Miller, H. (2017). Family-centred music therapy with preterm infants and their parents in the neonatal intensive care unit (NICU) in Colombia – A mixed-methods study. *Nordic Journal of Music Therapy*, *26*(3), 207–234. https://doi.org/10.1080/08098131.2016.1205650

Hall, R., Hoffenkamp, H., Tooten, A., Braeken, J., Vingerhoets, A., & Bakel, H. (2015). Longitudinal associations between maternal disrupted representations, maternal interactive behavior and infant attachment: A comparison between full-term and preterm dyads. *Child Psychiatry & Human Development*, *46*(2), 320–331. https://doi.org/10.1007/s10578-014-0473-3

Helmer, S. C., Thornberg, B. U., Frostell, A., Örtenstrand, A., & Mörelius, E. (2020). A randomized trial of continuous versus intermittent skin-to-skin contact after premature birth and the effects on mother–infant interaction. *Advances in Neonatal Care*, *20*(3), e48–e56. https://doi.org/10.1097/anc.0000000000000675

Helmer, S. C., Thornberg, B. U., & Mörelius, E. (2021). An early collaborative intervention focusing on parent-infant interaction in the neonatal period. A descriptive study of the developmental framework. *International Journal of Environmental Research and Public Health*, *18*(12), 6656. https://doi.org/10.3390/ijerph18126656

Heydarpour, S., Keshavarz, Z., & Bakhtiari, M. (2017). Factors affecting adaptation to the role of motherhood in mothers of preterm infants admitted to the neonatal intensive care unit: A qualitative study. *Journal of Advanced Nursing*, *73*(1), 138–148. https://doi.org/10.1111/jan.13099

Ionio, C., Mascheroni, E., Colombo, C., Castoldi, F., & Lista, G. (2019). Stress and feelings in mothers and fathers in NICU: Identifying risk factors for early interventions. *Primary Health Care Research and Development*, *20*(7), e81. https://doi.org/10.1017/S1463423619000021

Kearvell, H., & Grant, J. (2010). Getting connected: How nurses can support mother/infant attachment in the neonatal intensive care unit. *Australian Journal of Advanced Nursing*, *27*(3), 75–82. https://doi.org/10.3316/informit.910264579244080

Lasiuk, G. C., Comeau, T., & Newburn-Cook, C. (2013). Unexpected: An interpretive description of parental traumas' associated with preterm birth. *BMC Pregnancy and Childbirth*, *13*(1), S13. https://doi.org/10.1186/1471-2393-13-s1-s13

Mäkelä, H., Axelin, A., Feeley, N., & Niela-Vilén, H. (2018). Clinging to closeness: The parental view on developing a close bond with their infants in a NICU. *Midwifery*, *62*, 183–188. https://doi.org/10.1016/j.midw.2018.04.003

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: Guided by information power. *Qualitative Health Research*, *26*(13), 1753–1760. https://doi.org/10.1177/1049732315617444

Manuck, T. A., Rice, M. M., Bailit, J. L., Grobman, W. A., Reddy, U. M., Wapner, R. J., Thorp, J. N., Caritis, S. N., Prasad, M., Tita, A. T. N., Saade, G. R., Sorokin, Y., Rouse, D. J., Blackwell, S. C., & Tolosa, J. E. (2016). Preterm neonatal morbidity and mortality by gestational age: A contemporary cohort. *American Journal of Obstetrics and Gynecology*, *215*(1), 103.e1–103.e14. https://doi.org/10.1016/j.ajog.2016.01.004

Mörelius, E., Örtenstrand, A., Theodorsson, E., & Frostell, A. (2015). A randomised trial of continuous skin-to-skin contact after preterm birth and the effects on salivary cortisol, parental stress, depression, and breastfeeding. *Early Human Development*, *91*(1), 63–70. https://doi.org/10.1016/j.earlhumdev.2014.12.005

Neel, M. L. M., Stark, A. R., & Maitre, N. L. (2018). Parenting style impacts cognitive and behavioural outcomes of former preterm infants: A systematic review. *Child Care Health and Development*, *44*(4), 507–515. https://doi.org/10.1111/cch.12561

Ochandorena-Acha, M., Noell-Boix, R., Yildirim, M., Cazorla-Sánchez, M., Iriondo-Sanz, M., Troyano-Martos, M. J., & Casas-Baroy, J. C. (2020). Experiences and coping strategies of preterm infants' parents and parental competences after early physiotherapy intervention: Qualitative study. *Physiotherapy Theory and Practice*, 1–14. https://doi.org/10.1080/09593985.2020.1818339. [ahead of print].

O'Donovan, A., & Nixon, E. (2019). "Weathering the storm:" Mothers' and fathers' experiences of parenting a preterm infant. *Infant Mental Health Journal*, *40*(4), 573–587. https://doi.org/10.1002/imhj.21788

O'Higgins, M., Roberts, I. S., Glover, V., & Taylor, A. (2013). Mother-child bonding at 1 year; associations with symptoms of postnatal depression and bonding in the first few weeks. *Archives of Womens Mental Health*, *16*(5), 381–389. https://doi.org/10.1007/s00737-013-0354-y

Polic, B., Bubic, A., Mestrovic, J., Markic, J., Kovacevic, T., Juric, M., Tesija, R. A., Susjnar, H., & Kolcic, I. (2016). Late preterm birth is a strong predictor of maternal stress later in life: Retrospective cohort study in school-aged children. *Journal of Paediatrics and Child Health*, *52*(6), 608–613. https://doi.org/10.1111/jpc.13167

Puthussery, S., Chutiyami, M., Tseng, P. C., Kilby, L., & Kapadia, J. (2018). Effectiveness of early intervention programs for parents of preterm infants: A meta-review of systematic reviews. *BMC Pediatrics*, *18*(1), 223. https://doi.org/10.1186/s12887-018-1205-9

Rocha, N. A. C. F., dos Santos Silva, F. P., dos Santos, M. M., & Dusing, S. C. (2020). Impact of mother–infant interaction on development during the first year of life: A systematic review. *Journal of Child Health Care*, *24*(3), 365–385. https://doi.org/10.1177/1367493519864742

Sabnis, A., Fojo, S., Nayak, S. S., Lopez, E., Tarn, D. M., & Zeltzer, L. (2019). Reducing parental trauma and stress in neonatal intensive care: Systematic review and meta-analysis of hospital interventions.

Journal of Perinatology, *39*(3), 375–386. https://doi.org/10.1038/s41372-018-0310-9

Schmöker, A., Flacking, R., Udo, C., Eriksson, M., Hellström-Westas, L., & Ericson, J. (2020). Longitudinal cohort study reveals different patterns of stress in parents of preterm infants during the first year after birth. *Acta Paediatrica*, *109*(9), 1778–1786. https://doi.org/10.1111/apa.15185

Spinelli, M., Frigerio, A., Montali, L., Fasolo, M., Spada, M. S., & Mangili, G. (2016). 'I still have difficulties feeling like a mother': The transition to motherhood of preterm infants mothers. *Psychology & Health*, *31*(2), 184–204. https://doi.org/10.1080/08870446.2015.1088015

Terwee, C. B., Prinsen, C. A. C., Chiarotto, A., Westerman, M. J., Patrick, D. L., Alonso, J., Bouter, L. M., de Vet, H. C. W., & Mokkink, L. B. (2018). COSMIN methodology for evaluating the content validity of patient-reported outcome measures: A Delphi study. *Quality of Life Research*, *27*(5), 1159–1170. https://doi.org/10.1007/s11136-018-1829-0

Thomson, G., Flacking, R., George, K., Feeley, N., Haslund-Thomsen, H., De Coen, K., Schmied, V., Provenzi, L., & Rowe, J. (2020). Parents' experiences of emotional closeness to their infants in the neonatal unit: A meta-ethnography. *Early Human Development*, *149*, 105155. https://doi.org/10.1016/j.earlhumdev.2020.105155

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, *19*(6), 349–357. https://doi.org/10.1093/intqhc/mzm042

Treherne, S. C., Feeley, N., Charbonneau, L., & Axelin, A. (2017). Parents' perspectives of closeness and separation with their preterm infants in the NICU. *Journal of Obstetric, Gynecologic and Neonatal Nursing*, *46*(5), 737–747. https://doi.org/10.1016/j.jogn.2017.07.005

Treyvaud, K., Spittle, A., Anderson, P. J., & O'Brien, K. (2019). A multilayered approach is needed in the NICU to support parents after the preterm birth of their infant. *Early Human Development*, *139*, 104838. https://doi.org/10.1016/j.earlhumdev.2019.104838

Walsh, E., Blake, Y., Donati, A., Stoop, R., & von Gunten, A. (2019). Early secure attachment as a protective factor against later cognitive decline and dementia. *Frontiers in Aging Neuroscience*, *4*(11), 161. https://doi.org/10.3389/fnagi.2019.00161

Widding, U., Hägglöf, B., & Farooqi, A. (2019). Parents of preterm children narrate constructive aspects of their experiences. *Journal of Clinical Nursing*, *28*(21–22), 4110–4118. https://doi.org/10.1111/jocn.14948

World Medical Association. (2013). World Medical Association declaration of Helsinki: Ethical principles for medical research involving human subjects. *JAMA*, *310*(20), 2191–2194. https://doi.org/10.1001/jama.2013.281053

Zhang, X., Kurtz, M., Lee, S. Y., & Liu, H. (2014). Early intervention for preterm infants and their mothers: A systematic review. *Journal of Perinatal Neonatal Nursing*, *35*(4), e69–e82. https://doi.org/10.1097/jpn.0000000000000065

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Helmer, C. S., Thornberg, U. B., Abrahamsson, T., & Mörelius, E. (2023). Mothers' experiences of a new early collaborative intervention, the EACI, in the neonatal period: A qualitative study. *Journal of Clinical Nursing*, *32*, 2892–2902. https://doi.org/10.1111/jocn.16412