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REVIEW ARTICLE

Close Collaboration with Parents—Implementation and effectiveness

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Abstract

Aim: There has been a need to develop programs to facilitate family-centered care. This paper describes the content of a program called Close Collaboration with Parents, its implementation, and research on its effectiveness.

Methods: The program is a systematic training with a focus on staff communication and observation skills and skills to support parenting. The primary implementation strategy is mentoring. Staff engage in bedside practices and reflections with mentors covering all four phases of the program. The effects of this unit-wide program have been evaluated using a pre-post study design, a qualitative study design, and a register-based study design.

Results: The program has been successfully implemented in 26 units so far. Our research has shown that the training benefits infants, parents, staff, and healthcare organisations. Specifically, family-centered care practices improved after the program, the parents' presence and parent-infant skin-to-skin contact increased, infant growth improved and the length of hospital stays shortened. The mothers' depressive symptoms decreased in the long term.

Conclusion: We have described an educational program for the multidisciplinary staff of a neonatal intensive care unit, Close Collaboration with Parents. The program has changed hospital care cultures for the benefit of infants, parents, staff, and even the healthcare organisation.

KEYWORDS
family integrated care, family-centered care, NICU, preterm infant, staff training

1 | INTRODUCTION

This paper presents the Close Collaboration with Parents program, designed to educate neonatal staff in supporting parents and parenting during neonatal hospital care. Developed in response to the recognised need for greater parental involvement in the care of infants requiring neonatal hospitalisation, the program aligns with the philosophy of family-centered care (FCC).[1] The aim is to strengthen partnerships and collaboration between parents and health professionals, fostering shared responsibility,

Abbreviations: CC trainers, Close Collaboration with Parents training team; CLIP-I, Clinical Interview for High-Risk Infants-Initial; Digi-FCC, Digital evaluation tool of family-centered care; FCC, Family-centered care; NICU, Neonatal intensive care unit.

open information exchange, emotional support, negotiation, and shared decision-making. Additionally, the program seeks to facilitate the parents' autonomy in participation and decision-making.[2] The content of the intervention and the desired outcomes were also guided by theories of developmental psychology. The overarching goal is to enable relationship-based care for all infants and their parents in neonatal hospital care.

The intervention design process began in 2008, inspired by the planning of a single-family room NICU at Turku University Hospital. A multidisciplinary team designed the educational intervention. The content of the intervention was built on underlying knowledge about topics such as the neurobehavioral assessments of newborns with the NICU Network Neurobehavioral Scale[3] and using it as a tool to support parenting[4]; communication and shared decision-making[2]; psychological knowledge on the biological basis of bonding[5]; the transition into parenthood[6]; parent-infant early relationships[7] and transitioning from hospital to home.[8] All this knowledge was integrated into neonatal medical and nursing practices where the parents are viewed as equal partners in the infant care team.

2 | DESCRIPTION OF INTERVENTION

The Close Collaboration with Parents program is a systematic training model for the whole staff of a neonatal intensive care unit to improve their skills in supporting parenting and improving the family-centered care culture of the unit. As the program is a parent-partnered-care model, it not only influences care delivery but also contributes to changing hospital culture.[9]

The Close Collaboration with Parents program comprises four phases each theory-based. After the training, the staff learn to collaborate with parents and support parenting from the beginning of care at the hospital. In the initial phase, the staff learn to observe infant behaviour to identify each infant's preferences and needs. The staff learn to share their observations of an individual baby with their colleagues, which standardises the reporting about infant behaviour among the staff. The second phase involves joint staff-parent observations as a tool to create shared care plans with the parent. In this phase, the staff learn active listening skills and collaborative communication with parents. This helps them to appreciate the parents' observations on the behaviour of their infant, which forms a basis for shared care planning. In the third phase, the staff members learn to use a semi-structured discussion (CLIP-I interview) to listen to the parents' stories about how they became parents to this child. By using CLIP-I, the staff members gain a more empathetic understanding of the parents' experiences. The CLIP-I can be used to plan individualised support for the parent-infant relationship. The fourth phase integrates parents in decision-making during caretaking, medical rounds, and the transition from hospital to home. The goal is to initiate the preparations for transition to home early, based on the needs of the family. This leads to the appropriate timing of discharge for each family. All four phases include theoretical learning, bedside practice sessions, and reflections with a mentor.

Key Notes

- There is a need for programs that facilitate improvement in family-centered neonatal care culture.
- We have developed a systematic and structured educational program for multiprofessional neonatal staff to learn to provide neonatal care together with parents.
- Our research has shown the benefits of this program for infants, parents, staff, and healthcare organisations.

The main implementation methods of the Close Collaboration with Parents program are education, facilitation, and reflection. The theoretical content is provided through an e-learning module and lectures. However, the main method of education elements is experiential learning where the learners are actively engaged in the learning process. For experiential learning, the program includes practicing at the bedside in an authentic NICU environment. Bedside practice provides concrete experiences in which the learners are immersed. Through embodied learning, a deep conceptual understanding can be achieved and integrated into the local context.[10]

Mentoring serves as the primary facilitation strategy in the Close Collaboration with Parents program. Both external and local mentors support individuals in their experiential learning and ensure compliance with the program. The local mentors can be seen as change agents who assist units in implementing the program. Facilitation plays a crucial role in the successful implementation of evidence-based practices and programs in the healthcare context. Through facilitation, interpersonal communication helps in understanding complex issues, allowing mentors to identify necessary changes to achieve the goal. Due to the interpersonal aspect of mentoring, everyone shares the responsibility for improving unit practices, and the burden of change does not rest solely on the mentors or management.[11]

The concrete bedside practice provides a foundation for critical reflection. Mentors use reflection after bedside practice to help individuals integrate the new knowledge into their context and address context-specific problems.[12] These elements form a complete experiential learning cycle that supports adult learning.

3 | THE IMPLEMENTATION PROCESS

If a unit is interested in implementing the Close Collaboration with Parents program, preparation is started by informing the unit's staff about the goals and content of the training, along with the financial and human resources required for its execution. Based on this information, the unit can make an informed decision about their commitment to undergo the training.

If the unit decides to initiate the training, the local mentors will be selected and subsequently trained by the Close Collaboration training team (CC trainers), using a train-the-trainer method. The

CC trainers are a multidisciplinary team with scientific and clinical expertise, led by the developers of the program. The CC trainers include several mentors from hospitals that have implemented Close Collaboration with Parents. The training for local mentors typically takes place in English. Mentors with different levels of experience form a mentoring network as described by Kitson et al.[11] (Table 1).

Training for the local mentors and unit leadership includes a 5-day visit to a unit that has already undergone training, to provide inspiration about the potential results. The training of the local mentors continues through bedside practice at their own unit, which is reviewed and reflected upon in a total of eight 4-h remote sessions. Training is finalised during a 5-day face-to-face teaching visit in the unit of the local mentors, including a half-day implementation support session for the unit leadership. Thus, the training for the local mentors takes 14 workdays and is usually completed within 3 months.

Once the local mentors have completed their training, they will initiate the implementation process in their unit, as planned with the leadership of the unit. Supervision is recommended for the local mentors during the implementation process. The local mentors will train their colleagues in the local language. The structured training includes bedside practice and reflections. Before the bedside practice sessions of each phase, the staff members complete e-learning for theory, as well as interactive video practice (Table 1, materials). The e-learning module aims to standardise the theoretical content learned by each staff member, and it takes approximately 4 h to complete.[13] Each nurse works with their local mentor for six full-day shifts, and each doctor does six practice sessions with the mentor. The total duration of the staff training in one unit depends on the resources allocated for the local mentors, typically ranging from 12 to 18 months.

One central element in the Close Collaboration with Parents program is implementation support, provided throughout the training process in a unit. The implementation is supported by reflective sessions between the local mentors and the CC trainers to ensure fidelity. In these sessions, the progress of the planned implementation and the content of practices are reflected upon by local mentors, either face-to-face or remotely. In the face-to-face support, the CC trainers join the bedside practices led by local mentors and afterward reflect, especially on adherence to the program. In remote support sessions, the local mentors describe in detail their bedside practices, which are reflected upon collaboratively. Additionally, bedside practices are systematically documented and followed, allowing identification and collaborative resolution of any problems in the process. The use of the e-learning module is also monitored through the progress reports provided by the module.

The learning is based on joint practices with parents. As the staff learn to provide space and listen to the parents, they will also receive a new type of feedback about their care. The feedback from the parents will guide the staff and parents to collaboratively discover potentially better care practices. Through this process, the staff is empowered to find context- and culture-specific solutions, and parents become active partners in the unit's development.

After this implementation process, there will be a closing seminar summarising the training process of the unit from the perspectives of different stakeholders and reporting the improvement of the family-centered care practices.

4 | TAILORING AND MODIFICATIONS

In the implementation of the Close Collaboration with Parents program, the content of the practices should be delivered as planned. The implementation structure in different units can be tailored, including the total duration of the training. The number of mentors and the work hours allocated to mentoring have varied, as well as selecting how many and which staff members are in active training at one time period. All these factors determine the total length of the training and depend on the size of the unit and mentoring resources. These issues are planned collaboratively with the CC trainers and the unit leadership. The mentoring resources can be estimated to be about one person-year for 60 staff members (number of nurses x 6 workdays = the need for mentoring resources for nursing staff + mentoring for doctors). The amount and content of the practices and the structured model to train all staff members have been the same for all units.

One modification of the Close Collaboration with Parents program was to include a web-based e-learning module (www.closecollaboration.utu.fi). There were several reasons to develop such support for the training process. One reason was to standardise the quality of theoretical learning. Before the e-learning, the theoretical content was supported by a printed manual, but the actual use of the manual could not be verified. The use of e-learning can be tracked. In addition, the training expanded internationally, leading to long geographical distances that limited face-to-face teaching. The e-learning module allowed video material to demonstrate real-life practices. The e-learning module also supported teaching during the pandemic.

Another modification was to include medical round observations in phase four of training. Our research showed that the involvement of medical doctors was essential for successful implementation.[14] We developed the practice based on our research about medical round communication.[2,12] to involve doctors more actively.

5 | RESEARCH ON THE EFFECTIVENESS OF CLOSE COLLABORATION WITH PARENTS

Several evaluation studies on the effectiveness of the Close Collaboration with Parents program have been carried out in Finland. In addition, there are several ongoing studies in other countries.

Research design: The first hospital that developed and implemented this training, Turku University Hospital, evaluated

TABLE 1 The TIDieR template to report details of the Close Collaboration with Parents program.

Items	Description
1. Brief name	Close Collaboration with Parents A systematic training model for the healthcare teams of a neonatal intensive care unit to develop their communication and collaboration with parents and their skills to support parenting.
2. Why	There is a need to change the care paradigm in neonatal intensive care from a technical and task-oriented culture to a family-centered culture. The goal of this intervention is to educate the multi-professional healthcare teams to collaborate with parents and support parenting during neonatal hospital care. The program provides a deeper understanding of observing infants' individual needs, integrating parents in care planning and decision-making, and providing emotional support to parents. The training facilitates a care model in which care is provided in partnership with parents.
3. What (materials)	The program includes a printed manual and a web-based e-learning module describing all four main phases of the training. Each phase includes theory, practice sessions, and reflections. The manual provides instructions for bedside practice sessions and reflections. The e-learning tool also includes interactive video practice preparing for bedside practice sessions with a local mentor. In addition, the mentors are provided written guidelines supporting bedside mentoring. All the materials can be accessed after the NICU has committed to the training as a unit. The e-learning tool is demonstrated by an introduction page (www.closecollaboration.utu.fi) The manual and e-learning tool comprise materials supporting teaching including (1) A form to document infant observations systematically (2) a list of self-soothing, stress, and interactive behaviours and stages of alertness (3) a 'See me develop' form used to summarise the joint observations with parents, (4) A modification of the Clinical Interview for Parents of High-Risk Infants (CLIP) (Meyer et al 1993) called CLIP-I (Initial) to structure the reflective discussion with parents about their story of becoming parents to the infant, (5) Checklist for parents and staff about readiness for hospital-to-home transition (6) Form for observation during medical rounds (7) Structures for discussion with parents and health care team reflection after the medical round observation.
4. What (procedures)	1. An NICU with motivation to implement the program is informed about the training structure, and the financial and human resources to carry out the training. 2. The local mentors are chosen. 3. The local mentors are trained by the training team led by Turku University Hospital (CC trainers). 4. The local mentors train their colleagues with the support of their leadership and CC trainers. Local mentors invite the staff members to the e-learning module, conduct and document the bedside practices, and do the reflections after each bedside practice. Parents are actively involved in bedside practices. 5. The implementation is supported by reflective follow-up sessions between the local mentors and leadership and the training team. 6. After the implementation, a closing seminar is held to summarise the training process of the unit from the perspectives of different stakeholders and report the development of the care practices.
5. Who provided	The training team (CC trainers) led by the Turku University Hospital • Psychologist, Associate Professor in Clinical and Developmental Psychology, University of Turku, Finland (S.A-B) • Medical Doctor, Neonatologist, Professor in Paediatrics, University of Turku, Finland (LL) • Nursing Scientist, Associate Professor in Nursing Sciences, University of Turku, Finland (AA) • Trainer mentors who are experienced neonatal nurses or doctors with mentoring experience in their unit. The trainer mentors have done successful training in their unit in Finland or abroad and they have been motivated to disseminate their expertise. Each unit is provided with dedicated trainer mentors. The local mentors and unit leaders: • Local mentors are experienced neonatal nurses and doctors • A psychologist to support the unit mentors and leaders (optional)
6. How	The opening seminar contains lectures, usually repeated or recorded, to give every staff member a chance to receive the information. Local mentors are trained both in a unit that has already implemented the training (teaching centre) and the unit to be trained. The training includes an e-learning module, lectures, bedside practices, and reflections covering all four phases. The bedside training for the local mentor is provided individually by the dedicated trainer mentors. The staff members use the e-learning tool before their bedside practice with their mentor, followed by reflection. The training progresses phase by phase. The staff members may be trained in subgroups depending on the resources and the size of the unit. The unit leaders monitor and support the training progress. The CC trainers visit the unit, sometimes remotely, to support and give feedback on the implementation process. The final seminar is a 1-day seminar with a presentation by leaders, local mentors, staff members, parents, and the CC trainers.
7. Where	The staff training is mostly integrated into the everyday work in the neonatal unit. The training for the local mentors and leadership includes visits to a unit that has already implemented the training to give inspiration and vision. Seminar days occur in lecture rooms usually close to the neonatal unit. Remote teaching has been used especially during the pandemic.

TABLE 1 (Continued)

Items	Description
8. When and how much	The training for the local mentors consists of 15 workdays, usually within 3 months. Their training starts with 5-day teaching in the teaching centre, continues remotely with 4-h sessions 8 times, and is completed by 5-day teaching in the own unit of the local mentors. The multidisciplinary staff receives training in their unit. Each nurse works with their local mentor for 6 full-day shifts, including 4½ hours of e-learning. Each doctor does six practices with the mentor and e-learning. The mentoring resources can be estimated to be about one man-year for 60 staff members (number of nurses × 6 workdays = the need for mentoring resources). Each staff member participates in two seminar days (opening and closing seminars). The leadership participates in two seminar days and a half-day workshop on implementation planning. The local mentors and leadership participate in implementation support sessions, depending on the need, for 4–8 times either face-to-face or remotely. The implementation of the training in one unit takes an average of 18 months, depending on the size of the unit.
9. Tailoring	The total length of the training and the number of staff members that are allocated to the training at one time can be tailored. These depend on the available mentoring resources and the size of the unit. Some units have completed the training in 12 months, while in others it has taken over 24 months. However, units are expected to follow the protocol for the use of the e-learning module, the number and content of the bedside practice sessions, and the model of training all staff members.
10. Modifications	The training was developed for and carried out in Turku University Hospital from 2009 to 2012. Since 2012, the training has been implemented in 31 different units in 9 different countries. The units have provided feedback, based on which the training has been modified. The main modifications are listed below. Modification 1: First, the local mentors got their training for one phase at a time, delivering the training to unit staff after each phase. After modification, the mentors got the whole training before they delivered any training. This made it easier for the local mentors to understand where the training was leading. This also increased the flexibility of the training of staff members. Modification 2: First, the training included reflective group supervision sessions for the staff. This was not cost-effective because of the low participation rate as well as the difficulties in arranging group sessions due to work schedules and finding competent supervisors. After modification, supervision was offered only to the local mentors and leadership. Modification 3: Shared decision-making was included in phase four relating to the transition to home. However, it remained quite theoretical without observation. The modification was made to include medical round observation in the training. Modification 4: A requirement to document the practices and support for the local mentors and leaders throughout the training was added. Modification 5: International training increased distances, which created the need for an e-learning module. The e-learning module was created and provided basic knowledge with video practice. This tool facilitated long-distance teaching and standardised the theoretical content that each staff member receives.
11. How well (planned)	We observed situations where the implementation process slowed down or the practices started to deviate from the original model. These fidelity problems were solved by a requirement to document the completed practice sessions and by increasing implementation support for the local mentors and leaders throughout the training.
12. How well (actual)	The goal is to train all staff members. We have assessed that 75% coverage can be reached before the closing seminar and that this coverage has ensured substantial changes in the family-centered care culture.

the effects on maternal postpartum depression using a historical cohort as a comparison. The nurses of the same unit were interviewed about their experiences and how the training had affected their work.

Nine units collected data from a 3-month period before the training and a 3-month period after the training. This data included daily diaries, Closeness Diary,[15] about parents' presence in the unit, and parent-infant skin-to-skin contact. Parents kept the diaries throughout the hospital stay. In nine units, both parents answered daily a text message question out of nine questions sent by the Digi-FCC tool during the hospital stay of their infant to get information on the quality of FCC during each day. The staff members answered one DigiFCC[16] web question out of eight questions after each of their work shifts during a 3-month period. The results of five units have been published.[17] These data from the first four units could not be combined into the research report as the tool was modified between units number four and five to harmonise it with the international data collection. In eight of the units, the leadership, experienced staff members, and a sample of parents were interviewed about the unit's FCC practices using the Bliss Audit Tool.[17] In the same eight units, the leadership, staff members, and mentors were interviewed about the facilitating and hindering factors regarding the implementation of the Close Collaboration with Parents program.[14]

A national register study has been performed to compare infant outcomes (the length of hospital stay and growth, later readmissions, and unscheduled visits) in those units that have implemented the training compared to the units without the training.[18]

The main results of all of these studies are summarised below. The outcomes related to staff skills and care culture are reported first as the training focuses directly on these. Then, the downstream effects on infant and parent outcomes are reported. The details of the studies are shown in Table 2.

In the first unit performing the training, the nurses were interviewed about how the Close Collaboration with Parents training had affected their work reported. They described how nurses' roles changed from an active caretaker to a facilitator who supported the parents in infant care. They reported that, as a consequence of their new skills to engage parents and provide individualised care, parent satisfaction improved and infants were more stable.[20] In eight other hospitals, the Digi-FCC tool was used to get information on the family-centered care of each day in the unit. After the Close Collaboration with Parents program, the nursing staff gave statistically significantly higher scores on their performance regarding active listening and emotional support as well as parents' trust in the nurse. Fathers' responses indicated an increase in the quality of FCC, especially related to shared decision-making. Mothers' scores were at a high level at the baseline and did not show a change after the training.[19] Both staff members and parents reported improved family-centered care practices after the Close Collaboration with Parents program as compared to the baseline just before the training. Family-centered care practices improved widely, including all 10 categories of family-centered care in the Bliss Audit tool: (1) Active care by parent and staff, (2) Parent and family support, (3) Communication, (4) Developmental care, (5) Empowered decision-making, (6) Facilities, (7) Guidelines and policies, (8) Staff skills and training, (9) Information provision, and (10) Service improvement and parent involvement.[17]

In the study performed in nine hospitals, the Close Collaboration with Parents program was shown to increase parents' presence and parent-infant skin-to-skin contact, regardless of the baseline level of parents' presence or physical closeness. The time when either parent was present increased by an average of 99 min per day and skin-to-skin contact with a parent increased by 24 min per day.[21]

The national register study showed that preterm infants had better growth, shorter length of stay, and fewer unscheduled visits in the emergency room when taken care of in the units that had implemented the Close Collaboration with Parents program.[18]

Long-term effects of the training on mothers' depressive symptoms are suggested, as mothers had lower levels of depressive symptoms than the mothers in the earlier comparison cohort. The group difference in the mothers' depressive symptoms was still present 2 years after the due date.[22,23]

6 | INTERNATIONAL EXPANSION AND ONGOING RESEARCH

The Close Collaboration with Parents program has been implemented in 25 NICUs and six maternity and labor units in 21 cities and nine countries (Figure 1). Many units have performed quality improvement measurements, demonstrating the benefits of the program in their context. The Bliss Audit Tool has been utilised in Trondheim University Hospital and Riga Children's University Hospital.[24]

Scientific research is ongoing in Estonia, covering outcomes related to implementation success, staff skill development, FCC culture, and the parents' well-being and parenting. Both pre- and post-intervention data have been collected in five units, and the data are currently under analysis. In the Inha University Hospital in South Korea, the Hadassah Medical Center in Israel, and the Nagano Children's Hospital in Japan, the training and prospective pre-post cohort studies are ongoing. The effects of the program are being evaluated from the perspectives of infants, parents, and staff.

7 | DISCUSSION

We have described an educational program, Close Collaboration with Parents, for the multidisciplinary staff of a neonatal intensive care unit. It is a systematic and structured training program with a focus on staff communication and observation skills and skills to support parenting. These skills improve the family-centered care culture in the unit, leading to closer collaboration with parents and more individualised care for the infant and the family. Our research has shown that the training benefits infants, parents, staff, and even the healthcare organisation.[17–24]

The Close Collaboration with Parents program has been successfully implemented in different contexts and cultures in eight countries so far. Adaptation to different contexts should be carefully considered to understand how local context affects implementation and outcomes.[24] We have observed differences in the roles of the nurses and doctors, as well as large differences in staff resources between the NICUs. As the multiprofessional approach is central to the successful implementation of this program,[12] it is essential to support collaborative teamwork within the care team.[25] The parents have a central role in carrying out the practices and providing their perspective on implementation.[26] One key factor for successful teamwork is that the CC trainers empower the staff of a unit to develop their FCC practices in collaboration with parents. The training supports the staff to critically evaluate their family-centered care practices based on the parents' feedback during the bedside practice. The adaptive process is collaborative, not didactic. It is also important that leadership makes the organisation-level decisions related to the implementation of the program and mandates local mentors to make a change.[27]

One of the strengths of the Close Collaboration with Parents program is that the benefits reach all infants and parents in the unit, as the whole staff is trained. In contrast to many psychosocial parenting interventions,[28] this approach does not exclude the most severely ill infants or the parents with special medical, social, or psychological needs. This program has been shown to improve staff skills in active listening and in providing emotional

TABLE 2 Research about the effects of Close Collaboration with Parents program (referred to as 'intervention' in the table).

Publication	Design	Participants and setting	Sample size	Years	Outcome measurements	Results	Limitations
Axelin A, et al. MCN Am J Matern Child Nurs 2014; 39:260–268	Descriptive qualitative interview study with focus group interviews	Staff members who had received the training in the Turku University Hospital	22 nurses	Interviews in 3–5/2011		Nurses valued and trusted the parents more; nursing care became more adapted to the infant's individual behaviour; agency of infant care shifted more to the parents; nurses reported that parents were more committed to infant care and parents were more satisfied; nurses reported that infants were more stable. Risk: regression to past practices.	Voluntary participation in the focus groups
Ahlqvist-Björkroth S, et al. Paediatric Research 2019; 85:982–986 Ahlqvist-Björkroth S, et al. Acta Paediatr. 2022; 111:1160–1166.	Comparison with a historical cohort	Mothers of infants with birthweight ≤1500 g, speaking Finnish or Swedish, delivery in the Turku University Hospital	Historical cohort $n=145$ Post-interventionn $=93$ Historical cohort $n=126$ Post-intervention $n=54$	Historical cohort born in 2001–2006 Post-intervention cohort born in 2011–2015	Maternal depression using EPDS at 4–6 months CA of the child Maternal depression using EPDS at 24 months of CA of the child	EPDS scores were lower by a median 2.69 (95% CI from 1.58 to 4.22), $p<0.001$ EPDS scores were lower by 2.56 (95% CI from 1.64 to 3.48), $p<0.001$. Fewer mothers exceeded the EPDS score of 12, $p=0.009$ in multivariate analysis	Chronological bias and selection bias are possible
He FB, et al. BMC Pediatr 2021; 21:28.	Pre- and post-intervention study	Parents in 9 NICUs in Finland	Pre-intervention171 infants, 170 mothers, 126 fathers Post-intervention 130 infants, 129 mothers, 84 fathers	Pre-intervention 2012–2016, post-intervention 2013–2017. Two-year interval in each unit between pre-and postintervention data.	Closeness Diary throughout the hospital stay	Time when either parent was present increased by 99 min/day, $p<0.001$; Mother's presence by 107 min/day, $p=0.0004$; Father's presence by 68 min/day, $p=0.0156$. SSC increased by 24 min, $p=0.04$. Mother-infant SSC by 24 min/day, $p=0.0318$; Father-infant SSC by 8 min per day, ns.	Selection bias is possible.

(Continues)

TABLE 2 (Continued)

Publication	Design	Participants and setting	Sample size	Years	Outcome measurements	Results	Limitations
Toivonen M, et al. Pediatr Research 2020; 88:421–428.	A mixed method pre-post-intervention study to evaluate family centered care practices in the unit	Leadership, staff members, and parents in 8 units in Finland		Pre-intervention data collected in 2012–2015, post 2014–2017.	Bliss Baby Charter Audit Tool including 140 items	The quality of FCC improved in all 10 categories of FCC. The proportion of items fulfilled increased as reported by both parents (from 39% to 70%) and the staff (from 55% to 76%). The proportion of items not fulfilled decreased as reported by both parents (from 12% to 2%) and the staff (from 10% to 4%).	
Toivonen M, et al. Adv Neonatal Care 2023;23(3):281–289.	Pre- and post-intervention study.	Parents and nursing staff for 3 months before and 3 months after the intervention in the 5 NICUs in Finland	Pre-intervention 31 fathers, 53 mothers, Post-intervention 21 fathers, 61 mothers. 139 nurses working in the units	Pre-intervention data in 2014–2017; Post-intervention data in 2016–2018.	Digi-FCC tool	The nurses' scores increased in active listening, parents' trust in the nurse, and emotional support. The fathers' total score and the score related to shared decision-making increased. No changes in the mothers' scores.	Ceiling effect as the baseline scores were very high
Itoshima R et al. Neonatology 2024.	Register study comparing infants cared for in the NICUs with and without the intervention. Partial group if an infant was in two NICUs: one with and the other without intervention.	All preterm infants born in Finland below 35 weeks of gestation	Intervention group $n = 2104$. Partial group $n = 515$. Control $n = 11\,621$.	2006–2020	Length of hospital stay, growth during the hospital stay, hospital visits, and rehospitalisations after discharge	Length of stay was 1.8 days (6%) shorter in the intervention group compared to controls; weight gain was better by 11.7 g/week [95% CI 1.4–22.0], length by 1.3 mm/week [95% CI 0.6–2.0] for length. Intervention group infants had lower odds of having any unscheduled outpatient visits compared to controls (adjusted odds ratio 0.81; 95% CI 0.67–0.98).	Data unbiased but potentially noncontrolled confounding factors characteristic for hospitals interested in FCC compared to those not interested in FCC.

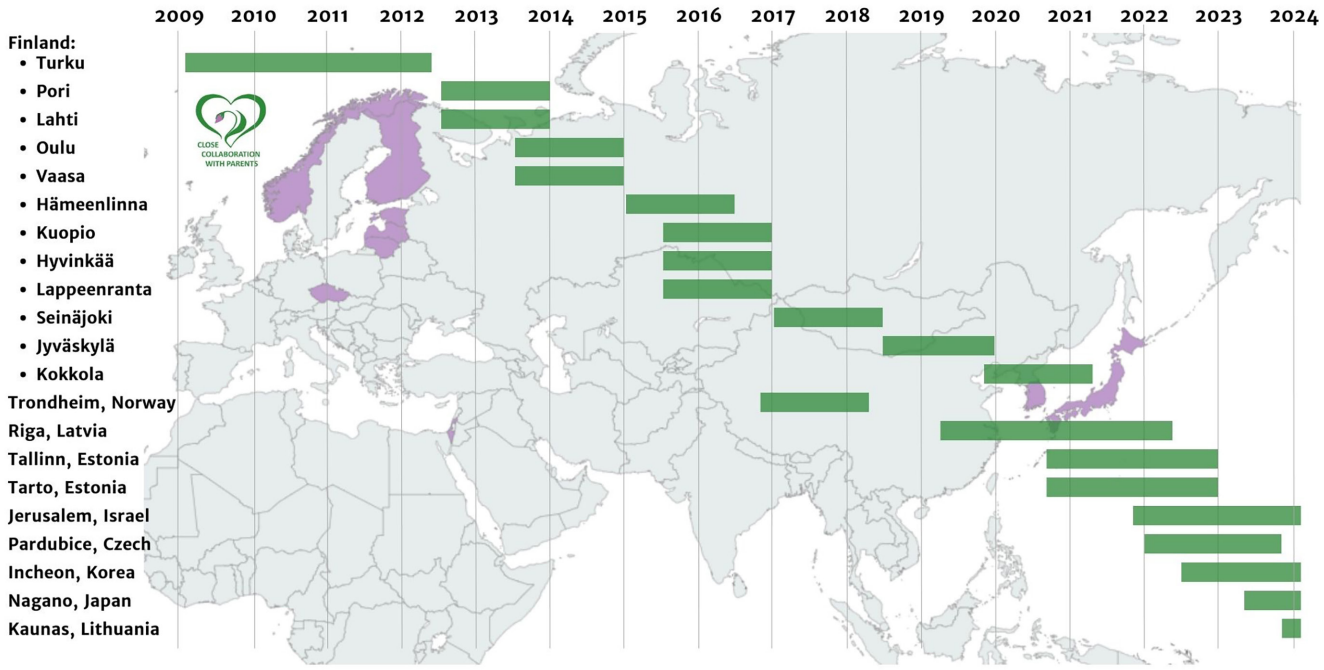

FIGURE 1 The countries and cities where the Close Collaboration with Parents has been implemented.

support.[16] These skills support individualised care and can be applied to the care of all families. The focus on communication skills, therefore, is another strength of this program. Staff-parent communication plays a central role in supporting the parents' coping, participation, and parenting skills.[29] The approach of training the whole staff makes the effects of the program more stable and sustainable, as the created culture does not become vulnerable when individuals leave the workplace. From a sustainability perspective, the goal is that the new communication skills and care practices become a routine in the unit and are also included in the orientation for new staff, along with other skills required in their work.[30] Reflective thinking skills are central to further developing care culture to meet the evolving needs of families.[30] However, it is still important to study the sustainability and adaptability of the program.

The vulnerabilities of this program include limited resources for scale-up, as the training has been conducted by the developers of the program. To expand the training to long distances, we have developed an e-learning module. Nevertheless, some face-to-face training is necessary, as the learning objectives are relationship-based and consist of communication skills. The training of trainers and the creation of national training centres might also be used to enhance the dissemination of the program globally in the future. National training centres would have knowledge of the local culture and could develop appropriate cultural adaptations.

There are several ideas for future research and development to be considered. There is a need to study how the program affects the staff's skills of reflection and their well-being. Staff wellbeing can support communication and vice versa.[31] The effects of the program have been studied in several contexts using different tools and methodologies. However, the published studies are all from Finland. The international studies on the effects of the intervention are ongoing, and they will increase the generalisability of the results. No studies have been performed using a randomised controlled study design either. Randomisation on the individual level is not applicable, as the training happens on the unit level. Cluster randomised studies have been proposed, but the funding has not been found. We have recognised potential areas for further development in the program content and implementation. Tailoring the program based on the baseline level of the unit might lower the threshold for initiation and also make the program more attractive for more advanced units. This program has been shown to affect the mothers' presence and mother-infant skin-to-skin contact more than the fathers'. Therefore, new approaches for partners might be helpful. Even if the underlying philosophy is to individualise the parenting support, there might be room to develop the support for different family types. High priority must be placed on monitoring the effects on the development of the infant/child in the long term.

AUTHOR CONTRIBUTIONS

Sari Ahlqvist-Björkroth: Conceptualization; methodology; writing – original draft; writing – review and editing. **Anna Axelin:** Conceptualization; methodology; writing – original draft; writing – review and editing. **Liisa Lehtonen:** Conceptualization; methodology; writing – original draft; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

ETHICS STATEMENT

This article is a review article that summarizes several original studies. The ethical statements are presented in the original publications.

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