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> At the heart of Heidelise Als' vision was sustainability.
>
> -*Mandy Daly*

INSIDE

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FAMILY VOICES

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Held, Unheld, and Held Again: A Mother's Journey Through Prematurity and the Power of Gentle Care

Corina Croitoru, founder of the Romanian Association of Parents of Long-term Hospitalised Newborns, ARNIS

Column Editors: Livia Nagy-Bonnard and Debra Paul

What does it truly mean to "hold" a baby—and what happens when that holding is interrupted? In this personal narrative, Corina Croitoru, mother of premature twins, reflects on how fear and survival-driven care can distance parents from their role, and how attuned, family-centred approaches can help restore connection. Through the lens of FINE and NIDCAP it is both a testimony and a call to action: compassionate, developmentally supportive care can reshape lives long after discharge.

I used to think of myself as an efficient mother. I had learned to care for my premature twin daughters with precision: firm, confident hands; meticulous notes about their feeds and stools; daily weigh-ins; constant checks to ensure every part of their tiny bodies worked as it should. I knew what to do if they forgot to breathe or if they vomited after feeding. They no longer needed medical treatment, but I felt certain I could have handled that too. I learned every physiotherapy movement, repeating the exercises even when my little girl cried.

(continued on p.2)

But when I look back now, after 16 years, I see a woman who had become disconnected from her own children. My daughters did not have a mother. They had a "nurse" engineered by nine weeks of neonatal survival. They had a "physiotherapist" whose mission was to help them recover. I wasn't mothering; I was performing.

Everything began to shift years later, in my role as President of the Romanian Association of Parents of Long-term Hospitalized Newborns - ARNIS, when I encountered the FINE (Family and Infant Neurodevelopmental Education) curriculum. It was the first time I saw, with painful clarity, that things could have been different — gentler, more humane. That realization opened the door to guilt, then to grief, then to regret.

Today, I find myself in a new place: celebrating every Romanian nurse who completes a FINE course, becomes attentive to the baby's cues, who notices stress and pain and responds with sensitivity. Nurses who bring humanity back into spaces where fragility reigns.

I remember vividly the first time I watched Inga Warren (FINE Developer and NIDCAP Trainer) handle a training doll. Every gesture was thoughtful: how she approached it, moved it, positioned it, and closed each care sequence. I was equally captivated by Mary O'Connor's (FINE facilitator and NIDCAP Trainer-in-Training) hands — how they held the doll, waiting for it to "recover" from the smallest sign of stress. Their work revealed something profound: that careful, attuned handling

The family at home

(continued on p.3)

Editorial

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The Global Reach of NIDCAP

As we celebrate 25 years of The NIDCAP Federation International (NFI), this issue offers a powerful reflection on how far the Organization has come and how widely NIDCAP principles have taken root worldwide. The abstracts and articles represent work from 14 countries, highlighting innovative programs and practices grounded in NIDCAP philosophy and adapted to diverse cultural and clinical settings.

Mandy Daly's inspiring Heidelise Als Lecture reminds us that embracing NIDCAP is ultimately about cultivating a culture. That culture is evident throughout this issue, across countries and continents. Larissa Korostenski's reflection captures the impact of engaging in NIDCAP discussions at international meetings and the value of sharing ideas beyond local boundaries. We also celebrate an important milestone with the certification journey of the newest NIDCAP Training Center in Ghent, Belgium, further strengthening the global NIDCAP network.

The power of partnership and lived experience is beautifully illustrated in the Family Story by Corina Croitoru from Romania. Her story highlights the vital role of families, education, and role models, and it is especially encouraging to see parents taking the lead in advancing developmental care for premature and sick newborns. These shared experiences deepen our understanding and enrich our practice.

I would also like to extend my sincere thanks to the contributors who shared images for this issue of the *Developmental Observer*. The striking cover photograph, taken by Petra Sztahovits, is part of a series she has generously offered for future issues. It is a reminder that images, like stories, can transcend language and geography, speaking directly to the heart.

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Cover image: Maja, photographed by Petra Sztahovits, Hungary. Used with permission.

teaches mothers, too, how to see their babies anew. It reminds you that this is your child, even amid the machinery and the fear.

Over time, I came to understand that a nurse's role is not only clinical. It is pedagogical. A nurse helps mothers learn about their baby — gently, step by step — and protects the newborn's neurological development with every interaction. The principles of Montessori pedagogy of demonstrating actions patiently, in sequence, until they are absorbed, could inform neonatal care beautifully. Each moment with a parent becomes a learning opportunity, a chance to build confidence and connection.

During pregnancy, a baby is held completely by the mother's body. To witness my daughters being uncontained in the newborn intensive care unit remains one of my deepest pains. Sixteen years ago, in Romania, they did not receive NIDCAP-oriented care. They lay in incubators without nests, wriggling like small earthworms toward the edges. Nurses repositioned them to the center, on their backs, "as per regulation," but nothing held them. The emptiness around them — physical and emotional — was excruciating.

A bonded family

For days at a time, I was not permitted to touch them. I first held one daughter after four weeks, the other after six. We had no skin-to-skin contact. They were not even called

Continued on p.4

Editorial Board

by name: they were "Twin 1" and "Twin 2." This separation slowed the development of our attachment, which grew only through sustained, conscious effort.

The healing came unexpectedly, through a game my daughters initiated. At four years old, they wanted to return to my womb. They would crawl under my loose T-shirt, instinctively taking up their places — one on the right, one on the left — exactly as they had shared my uterus for twenty-nine weeks. Their patience in this ritual was astonishing. Suddenly, I found myself "pregnant" with them again, and I realized how much I, too, needed this symbolic return.

After several days, they decided it was time to be "born," miraculously in the same order as in real life. I held them like newborns, cared for them gently, breastfed them in play — although in reality I had expressed milk and fed them by bottle, believing, as I had been taught, that premature babies fed more easily that way. Only after this reenactment were they ready to go to kindergarten. Through play, we repaired what had felt impossible to mend.

My bond with my daughters continued to strengthen through "Special Time," a parent–child connection method promoted by Hand in Hand Parenting. Through this practice, I rebuilt a secure attachment with the twin who had no medical challenges. In an unexpected twist, she was the child with whom reconnecting was more difficult.

> **"Recently, I learned something that feels both simple and revolutionary: just as a premature baby needs an incubator, a woman who gives birth too soon needs a *psychological incubator*.**

A bonded family

When one baby is medically fragile, parents instinctively invest all energy in that child's recovery. Every minute feels precious. I focused so intensely on the daughter who needed intervention that, until she was three or four, I "forgot" — without malice but through exhaustion — that her healthy sister also needed me.

This is why I believe professionals must pay specific attention to families with multiples when one baby is ill or has

16 years on

died. Keeping them together, even in intensive care, through Kangaroo Care, helps weave a healthy attachment between the parent and the healthy child. Parents do not neglect intentionally; they follow instinct and urgency. It is our responsibility, as Associations and as healthcare staff, to help them nurture connection in all directions.

Recently, I learned something that feels both simple and revolutionary: just as a premature baby needs an incubator, a woman who gives birth too soon needs a *psychological incubator*. She needs a protected emotional space to adapt, to reconnect, to become a mother under circumstances she never imagined. Kangaroo Care is the only intervention that reliably provides that psychic holding.

I have also come to appreciate how deeply cultural traditions hold wisdom we once practiced instinctively. Before our first FINE course in Romania, I visited the Village Museum in Bucharest with Dr. Inga Warren. There, I realized how close many Romanian ancestral practices are to FINE and NIDCAP principles. Newborns were placed in wooden troughs that naturally supported a curled, midline posture. Babies remained with their mothers constantly, even during agricultural work.

Although modern research now validates these approaches, I felt them instinctively from the first FINE course — as though part of this knowledge lived already in my body. But when your baby is in intensive care, fear eclipses instinct. You need specialists, trained in FINE and NIDCAP, to guide you back to what your intuition once knew.

For years, I carried remorse that the care my daughters received sixteen years ago did not protect their neurological development. I wondered — pointlessly — how different their abilities might have been if their environment had been less overstimulating: the television blaring in the ward, the constant neon lighting, the abrupt handling; if they had received

breast milk for pain relief during procedures; if they had been positioned properly in the incubator; if bath time at the sink tap had not been a moment of distress. I will never know. But this unanswerable question became my purpose.

Today, I want Romanian newborns to receive care that protects the developing brain — especially in a country still building its follow-up and early intervention systems.

I may no longer be an "efficient mother," but I have become an efficient Non Government Organization (NGO) professional. I take immense joy in developing plans for implementing FINE in Romania with Dr Inga Warren and Beverley Hicks from the UK, who has supported us since the first training in 2018. Beverley knows where we began, and we celebrate each milestone. We still lack a NIDCAP specialist in Romania, but we now have 550 clinicians trained in FINE 1 and twelve graduates of FINE 2 — a foundation we once only dreamed of.

By 2026, we will develop the National Guideline for Kangaroo Care and introduce clinical protocols in two maternity hospitals. Through sustained advocacy, we have already initiated legislative change regarding parental access in neonatal intensive care.

None of this would have been possible without the extraordinary women in the Romanian Association of Parents of Long-term Hospitalized Newborns – ARNIS team — Ruxandra, Ileana, Luiza, Melinda and Emilia — who have worked day after day, year after year, to move our mission forward. I am also deeply grateful to Livia Nagy Bonard in Hungary (Melletted a helyem Egyesület) and Lela Vavuraki in Greece (Ilitominon), who first introduced me to FINE and NIDCAP at a Global Foundation for the Care of Newborn Infants - GFCNI Patient and Parents Organizations Summit.

Ultimately, joining the GFCNI network was the decisive moment that illuminated both my personal purpose and the Association I had just founded. For that, I owe profound thanks to Silke Mader, whose vision created a community grounded in sincerity, solidity, and unconditional collaboration.

The Heidelise Als Lecture – 36th NIDCAP Trainers Meeting, Copenhagen 2025

Mandy Daly

NFI Board Member, Director of Education and Research, Irish Neonatal Health Alliance

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Dr. Heidelise Als devoted her life to transforming the care of the most vulnerable infants, redefining how we understand and support premature and ill newborns. Her vision for the future was both clear and deeply human: that every infant is recognised as a competent individual, deserving of respect, dignity, and care that responds to their unique needs and strengths. She saw NIDCAP not as an optional model, rather as the foundation of a healthcare culture that is relationship-based, compassionate, and truly centred on the infant and family. She encouraged us to position NIDCAP as a pathway toward the future of newborn medicine—one that prioritises not only survival but thriving, resilience, and quality of life.

Carrying forward Dr. Als' vision requires more than adherence to a model. NIDCAP requires inspiring healthcare providers to reimagine their role in the lives of infants and families. One of the most powerful ways to inspire change is to share stories and evidence of NIDCAP's impact. When providers witness how an infant becomes more stable, how a mother feels empowered to comfort her baby, or how developmental outcomes improve over time, they realize that their actions matter deeply. NIDCAP transforms the experiences of families as well as the meaning of caregiving, offering providers the fulfilment of relationship-based practice rather than task-driven routines.

At the heart of her vision was sustainability. Dr. Als placed enormous value on mentoring and education, ensuring that each generation of healthcare professionals would be equipped with technical skills embedded within the mindset of respect, empathy, and partnership. NIDCAP, helps caregivers move beyond medical monitoring to truly "read" the infant's language. Seeing colleagues model this approach in daily care—leaders who embody respect, patience, and collaboration—encourages others to follow.

Healthcare providers can also be inspired by evidence. Research consistently demonstrates that NIDCAP improves medical and neurodevelopmental outcomes, enhances parent-infant relationships, and is cost-effective. Positioning NIDCAP as both scientifically validated and ethically compelling, strengthens its case as the future of newborn care.

Mandy Daly

> "One of the most powerful ways to inspire change is to share stories and evidence of NIDCAP's impact.

Embracing NIDCAP is about cultivating a culture. NIDCAP invites teams to work collaboratively, valuing every discipline's contribution to the infant's developmental journey. It challenges healthcare systems to look beyond survival rates and consider long-term thriving, resilience, and quality of life. By framing NIDCAP as a future-focused, human-centred approach, providers can see themselves as part of a movement that is evidence-based, and transformative for families and profoundly meaningful for their own practice.

Her legacy reminds us that the future of newborn care depends on medical innovation provided with the compassion and the recognition of each infant's humanity.

Early Kangaroo Care in Preterm ≤32 Weeks and Very Low Birth Weight Infants: A Systematic Review and Meta-Analysis

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Background

Kangaroo care (KC), involving skin-to-skin contact, early breastfeeding and early discharge, has consistently shown benefits in improving outcomes for preterm and low birth weight infants. The latest World Health Organization (WHO) guidelines recommend initiating KC as early as possible after birth for all preterm and low birth weight (LBW) infants. However, in clinical practice, the most vulnerable infants – extremely preterm and very low birth weight infants (VLBW) – often do not receive early KC due to concerns about physiological stability.

Aim

This systematic review and meta-analysis aimed to evaluate the effectiveness of early KC (initiated within the first 24 hours) versus conventional neonatal care in very preterm infants (VPT) (≤32 weeks) and/or VLBW infants (<1500 g).

Methods

A comprehensive search of MEDLINE (via PubMed), SCOPUS, Web of Science, and CENTRAL databases was conducted, from inception until September 2024. Randomized controlled trials (RCTs) comparing early KC to conventional care in VPT and/or VLBW infants were included. The primary outcome assessed was all-cause mortality during birth hospitalization or until 28 days of life. Risk of bias was assessed using the Cochrane Risk of Bias tool. Meta-analysis was conducted using R, with relative risks (RR) and 95% confidence intervals (CI) calculated.

This systematic review was conducted in accordance with the Cochrane Handbook for Systematic Reviews of Intervention and follows the recommendations outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The protocol was registered at PROSPERO (CRD42024592172).

Results

A total of 3226 studies were retrieved, of which four RCTs published in five reports, encompassing 1679 newborns, were eligible for our systematic review. All four included studies were published since 2021. The primary outcome, all-cause mortality, was reported in two studies, covering 1472 infants. The meta-analysis revealed a pooled RR of 0.81 (95% CI: 0.67–0.98; $I^2 = 0.0\%$), suggesting a 19% reduction in mortality risk at 28 days among newborns who received the intervention compared to conventional care. Two studies reported infection rates (n = 1423), with a pooled RR of 0.89 (95% CI: 0.77–1.02; $I^2 = 9.9\%$), indicating a non-significant 11% risk reduction. The effect of early KC on hypothermia was evaluated in 263 infants across three studies. For moderate hypothermia, a 38% risk reduction was observed (RR = 0.62; 95% CI: 0.39–1.00), while results for mild hypothermia were inconclusive. Moderate heterogeneity was observed in the analyses related to hypothermia.

Conclusion

The findings of this systematic review and meta-analyses reinforce the WHO recommendations on the effectiveness and safety of applying early KC in the first 24 hours of life to very preterm and VLBW infants. Current evidence supports that early KC seems to exert a protective effect on mortality and infection in this higher-risk population. Nevertheless, future research is needed, including a broader spectrum of preterm infants, particularly those born before 28 weeks of gestation or weighing less than 1000g.

Relevance to NIDCAP

This study provides evidence-based support to integrate early KC into neonatal care protocols of very preterm and VLBW infants.

Feasibility and Impact of Comprehensive NIDCAP Integration in a High-Acuity Cardiac Setting

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Background

Infants with congenital heart disease (CHD) face elevated neurodevelopmental risk due to both their underlying physiology and the stressors of intensive medical interventions. Yet, developmental care remains underrecognized in cardiac intensive care settings and is often perceived as incompatible with the medical complexity of infants with CHD. The Newborn Individualized Developmental Care and Assessment Program (NIDCAP) is a relationship-based, evidence-supported framework grounded in detailed observation of infant behavior and individualized support. This prospective, controlled pre-post trial represents the first comprehensive NIDCAP implementation in a cardiac intensive care context.

Aims

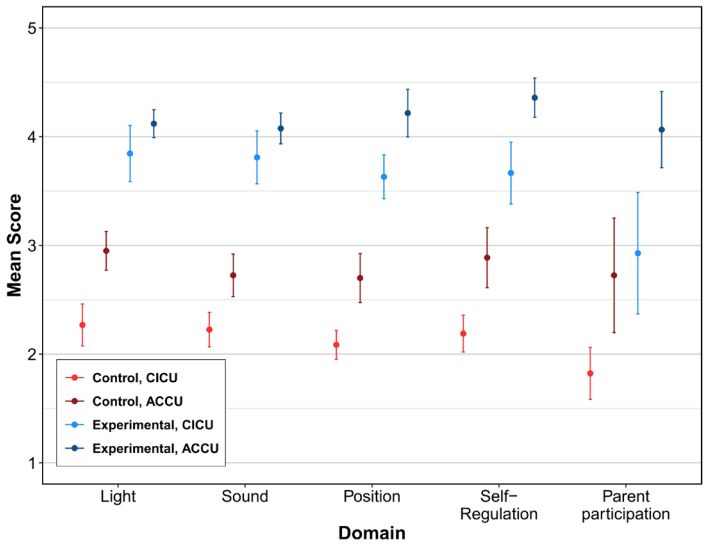
The aim was to evaluate the feasibility, safety, and transformative potential of NIDCAP-guided care for full-term newborns with CHD in the Cardiac Intensive Care Unit (CICU) and Acute Cardiac Care Unit (ACCU) of a quaternary care center.

Methods

Infants undergoing cardiac surgery within seven days of birth were enrolled into a standard care group (control) or a comprehensive NIDCAP care model (intervention). Intervention infants received comprehensive NIDCAP observations and narrative reports authored by certified NIDCAP Professionals, guiding individualized care planning. Daily care was adapted based on each infant's behavior and neurodevelopmental goals, supported by a fully trained multidisciplinary team. Staff participated in immersive, simulation-based NIDCAP education. Family presence and engagement were central to care and actively facilitated. The quality of care was evaluated using the Profile of the Nursery Environment and of Care Components Template Score Sheet, incorporating select items from the NIDCAP Nursery Certification Program. Domains assessed included environmental support, caregiving interactions, and family integration. Parents maintained daily diaries, and staff completed post-training surveys. Medical and neurodevelopmental outcomes are under ongoing analysis.

Figure 1: Amount of NIDCAP care in the CICU and ACCU for Control and Intervention group infants.

Points represent the mean score for each group. Higher scores represent more NIDCAP-based individualized developmental care. Error bars are 95% confidence intervals using generalized estimating equations to account for within-subject correlation.



Results

Following NIDCAP education, 96% (n=188) of staff reported feeling more prepared to provide NIDCAP care; 80% reported sustained or increased confidence in delivering care. Practice improvements included enhanced reading of infant behavior, attuned positioning, increased skin-to-skin holding, and enriched parent collaboration. Intervention and control groups (n=16 vs. n=17) were demographically similar (52% male, 27% single ventricle CHD). Median CICU stay was shorter in the intervention group (10 vs. 15 days). Across 420 structured audits, intervention infants received significantly higher NIDCAP-aligned care scores ($p<0.01$). See Figure 1.

Developmental care quality was consistently higher in the ACCU than in the CICU across both groups ($p<0.01$). Parent diaries reflected greater involvement in caregiving (78% vs. 67%) and increased holding (72% vs. 61%). No safety events were reported.

Conclusions

Comprehensive NIDCAP care can be safely and effectively implemented in high-acuity cardiac settings. The findings challenge assumptions that individualized developmental care is not feasible alongside intensive medical treatment. Through detailed behavioral observation, family partnership, and developmental attunement, this intervention reshaped practice and improved developmental care quality. The model provides a scalable and reproducible pathway for delivering NIDCAP-consistent, relationship-based care even in the most complex newborn environments.

Relevance to NIDCAP

This study represents the first implementation of a full-scope NIDCAP model in a cardiac intensive care context and demonstrates that NIDCAP principles can be successfully integrated into the care of infants with complex CHD. Certified NIDCAP professionals conducted full behavioral observations and narrative reports to inform daily care, aligning precisely with NIDCAP standards. The evaluation tool provided fidelity of the intervention. The study highlights NIDCAP's relevance and adaptability to high-acuity environments.

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Implementation Status and Determinants of NIDCAP-Based Nursing Practices in Neonatal Intensive Care Units in China

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Aims

This study aimed to evaluate the current implementation status of the Newborn Individualized Developmental Care and Assessment Program (NIDCAP) among newborn intensive care unit (NICU) nurses across China and to identify key factors influencing the delivery of developmental supportive care behaviors. It also sought to offer evidence-based recommendations to support improvements in NIDCAP practice.

Methods

We conducted a descriptive cross-sectional study among 433 NICU nurses from 14 hospitals across seven geographical regions of China, selected via convenience sampling. Data were collected from July 2023 to January 2024 using an anonymous online questionnaire platform, with each hospital assigning a trained nurse coordinator to ensure consistency and data quality. Before deployment, all coordinators received standardized training via online sessions.

The questionnaire consisted of two parts: (1) demographic and institutional characteristics such as age, education level, NICU working years, type of hospital, and presence of prior NIDCAP-related training; and (2) the Chinese version of the Developmental Supportive Care Scale for NICU Nurses (DSCS-N). The original DSCS-N was developed by Kim et al.[1] in Korea and adapted for Chinese NICU settings by Qian et al.[2] through forward–backward translation, pilot testing, and psychometric validation. The scale comprises 20 items across six dimensions: environmental support (5 items), parental support (3), interaction (3), critical thinking (3), professional support (3), and collaboration (3). Each item was rated on a 4-point Likert scale (1 = "never perform" to 4 = "always perform"), yielding a total score ranging from 20 to 80. Higher scores indicate stronger performance in developmental care. Descriptive statistics, t-tests, ANOVA, and stepwise multiple regression were conducted using SPSS 26.0 to identify influencing factors.

Results

The DSCS-N total score among participants ranged from 21 to 80, with a mean of 65.41 ± 12.79. The average item score was 3.27 ± 0.64, suggesting a moderate overall level of NIDCAP implementation in Chinese NICUs. Among the six care dimensions, the "Interaction" domain scored highest (mean = 3.52 ± 0.58), followed by "Behavioral Observation and Feedback" (3.29 ± 0.76), while "Education and Resource Support" was lowest (3.09 ± 0.88). These results indicate that nurses emphasize relational care and responsiveness to infant cues but face barriers to formal training and institutional support mechanisms.

Stepwise multiple regression analysis revealed that prior NIDCAP-related training was the strongest predictor of total DSCS-N score ($\beta = 0.631$, $p < 0.001$), followed by education level ($\beta = 0.281$, $p = 0.004$), length of NICU experience ($\beta = 0.256$, $p = 0.012$), and hospital type ($\beta = 0.198$, $p = 0.027$). The model accounted for 60.8% of the variance ($R^2 = 0.608$, $p < 0.001$). Nurses who had undergone formal NIDCAP training scored an average of 16.13 points higher than those without training, highlighting a substantial impact of structured exposure on practice behavior. Nurses with ≥5 years of NICU experience also demonstrated more consistent developmental care delivery, particularly in crisis management and behavioral regulation.

Conclusion

Although NIDCAP practices have been adopted in Chinese NICUs, implementation remains variable and moderate. Barriers include limited training, staffing shortages, and reduced family involvement. Structured hybrid training, integration into credentialing, and nurse–parent collaboration are recommended. National policies should support NIDCAP institutionalization within pediatric care standards.

Relevance to NIDCAP

This study offers large-scale empirical evidence on the implementation of NIDCAP principles in China. It identifies key gaps and influencing factors, offering insights aligned with the NIDCAP Federation International's Strategic Plan. The findings support targeted interventions to build workforce capacity, enhance developmental care competencies, and guide policy to advance NIDCAP globally.

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Understanding the Team Structure and Infant and Family-Centered Developmental Care Practices in NICUs in India

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Background

Newborn Intensive Care Units (NICUs) are critical in ensuring the survival and well-being of preterm and critically ill infants. Although India's healthcare system includes state-of-the-art neonatal care, its vast and diverse physical and cultural landscape poses challenges to the implementation of Infant-Family-Centered Developmental Care (IFCDC).[1,2] The effectiveness of IFCDC in the NICU requires a structured healthcare team and interdisciplinary collaboration to implement its knowledge. Studies have highlighted the need for focused and standardized neonatal nursing education that promotes collaborative care to enhance the capacities and effectiveness of newborn care.[2,3] This study was conducted to understand the current implementation of IFCDC practices in India.

Aims

Our aims were (1) to explore the team composition and structure in NICUs in India, (2) to assess the implementation of IFCDC practices, (3) to identify challenges faced by healthcare professionals in implementing IFCDC practices, and (4) to explore the neonatal outcomes after the implementation of IFCDC.

Methodology

A cross-sectional survey was conducted among a multidisciplinary convenience sample of healthcare professionals working in Indian NICUs. A structured questionnaire was developed based on the NIDCAP Nursery Self-Assessment Questionnaire[4] and expert consultation. The survey collected information on team composition, decision-making, interdisciplinary collaboration, training, parental involvement, implementation of IFCDC practices, barriers to implementation, perceived impact on neonatal outcomes and institutional policies related to neonatal care.

Results/Findings

Responses to the survey were received from NICUs at levels IV (46%), III (38%), and II (15%). The team in each NICU consisted of neonatal nurses (85%), paediatricians (77%), neonatologists (61%), physiotherapists (31%), speech and language therapists, lactation nurses, dietitians (23%), and psychologists (0%). Although there was high interest in implementing IFCDC in NICUs (100%), there was a lack of a formal NICU policy for its implementation (100%). Developmentally Supportive Care (DSC)[5,6,7] was the preferred model (77%), followed by family-participatory care (FPC)[8] (31%); no NICU used NIDCAP. The most common IFCDC practices were Kangaroo Mother Care (KMC) and parent-performed diaper changes (100%). Mothers had unrestricted visiting (84%), while fathers had visiting restrictions due to hospital policies.

The most frequently identified barriers to IFCDC implementation were infection control (77%), lack of training (46%), high patient load (39%), and staff resistance due to workload (39%). Psychological support was provided by nursing staff and doctors (85%). However, all responders expressed the need for a trained psychologist (100%) and systemic-level change by policymakers to implement IFCDC (100%).

All NICUs had a discharge planning process that prepared parents for the transition, and all had a developmental follow-up policy (100%). Responders expressed a need for additional support, including staffing (85%), affordable training (69%), infrastructure (62%), policy (100%), and financial resources to implement IFCDC (62%).

Conclusion

Indian NICUs identified IFCDC as important for optimal outcomes. This study has highlighted differences in NICU team structures and the varying implementation of IFCDC practices across Indian NICUs. The findings will inform policy decisions and guide training programs to improve newborn outcomes.

Relevance to NIDCAP

NIDCAP is an individualised, developmentally supportive, family-centered, research-based model of care. NIDCAP's systems-based approach and quality-assured training program, including the NIDCAP Nursery Program, will systematically address the challenges identified by this study, and will lead to higher levels of integrated IFCDC for hospitalised newborns and their families in India.

(References continues on p. 12)

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Effect of Shifting From Open Bay to Single-Family Rooms on Closeness in a NICU

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Aims

To assess the impact of moving from open bay units (OBU) to single-family rooms (SFR) on parental closeness in the Newborn Intensive Care Unit (NICU).

Methods

This observational longitudinal cohort study was conducted between February 2021 and January 2024, during which time the setting changed from OBU to SFR with a mixed phase in between. The setting was in the Amsterdam UMC in the Netherlands. All parent-infant dyads were eligible for inclusion. The self-reported time present in the unit, lap holding and skin-to-skin care (SSC) were used to measure parental closeness.

Results

A total of 833 dyads of parents and infants were included (365 OBU, 140 mixed, 328 SFR phase). Parental presence increased for mothers from a median of 210 minutes/day in the OBU to 420 minutes/day (p=.000) in the SFR, and for partners from 180 to 360 minutes/day (p<.001). Only for mothers, lap holding time increased from a median of 100 minutes/day in the OBU to 120 minutes/day in the SFR phase (p=0.046). SSC increased from a median of 120 to 160 minutes/day (p=.002) for mothers and from 110 to 130 minutes/day (p=.004) for partners.

Parents were significantly more present on the day of birth in the SFR than in the OBU (p=.010 and p=.029, respectively). This was also observed on the second to seventh days of life and in the second week of life and beyond (p<.001). Parents spent nearly twice as much time in the SFR compared to the OBU, and SSC time increased by 25-50%. The effects of SFR on parent-infant closeness were present from the first day of admission. Subgroup analysis revealed only minor, non-significant differences across gestational age groups. The changes in presence, on lap, and SSC time between the three phases were similar in all gestational age (GA) groups for both mothers and partners.

Conclusion

The study showed that moving from an OBU environment to SFR increased parent-infant closeness, as measured by parental presence, holding on the lap, and SSC time. This improvement is observed in both mothers and partners and is independent of the infants' GA. Despite the positive effects of architectural changes, more changes are needed to meet the GFCNI and WHO recommendations for parent-infant closeness in the NICU.

Relevance to NIDCAP

NIDCAP focuses on strengthening families, creating a supportive physical environment for infants and their parents that fosters opportunities for closeness is a key topic within this philosophy. The vision of the level III NICU at the Amsterdam UMC is described as a family-integrated care system grounded in the NIDCAP philosophy. Professionals are trained in FINE 1, FINE 2, FINE 3, and NIDCAP. Changing from OBU to SBU is seen as essential for strengthening families and as an option to create the best possible environment for them.

Neural Sensitivity to Social Cues in Preterm Preschoolers: Reduced Voice but not Face Processing

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Introduction

Although both medical and developmental outcomes for preterm infants have improved considerably in recent decades, children born preterm remain at elevated risk for cognitive, behavioral, and socio-emotional difficulties, collectively referred to as the *preterm behavioral phenotype*. A key feature is atypical social orienting, characterized by reduced attention to socially relevant cues, resembling patterns observed in autism spectrum disorder.

Aims

This study aimed to investigate neural mechanisms underlying social processing in preterm preschoolers, focusing on sensitivity to social auditory and visual cues.

Methods

We followed a cohort of preterm children (24–34 weeks GA) from birth. At five years of age, we employed frequency-tagging EEG to investigate neural sensitivity to key social cues (expressive) faces and voices. Frequency-tagging EEG is based on the principle that brain activity synchronizes with the frequency of periodic stimulation, allowing selective tagging of different sensory streams and stimulus categories. A preterm group (N=66) and a matched full-term control group (N=32) completed four EEG paradigms, each lasting two minutes: two multi-input paradigms presenting social and non-social stimuli simultaneously but tagged at different rates (faces vs. houses; voices vs. object sounds), and two oddball paradigms with neutral faces or voices interleaved with expressive ones (fearful or happy). Linear mixed models assessed group and stimulus effects. Additionally, correlations were obtained between neural responses and language outcomes as well as ADOS-2 (Autism Diagnostic Observation Schedule) scores.

Results

Both preterm and full-term children showed a neural bias toward social stimuli. Preterm preschoolers exhibited significantly reduced auditory social tuning compared to full-term peers ($p < 0.001$), with no group differences in the visual domain ($p = 0.99$). There were no group differences in discriminating expressive faces ($p = 0.43$), but preterm children showed reduced neural sensitivity to expressive versus neutral voices ($p = 0.03$), independent of emotion type.

In the preterm group, neural responses to voices were unrelated to gestational age, birth weight, or NICU stay. Across groups, stronger voice responses at 3.70 Hz correlated with better language outcomes (Verbal Comprehension Index: $\rho = .25$, $p = .02$; letter knowledge: $\rho = .25$, $p = .03$), with the former remaining significant after controlling for GA and SES. A trend-level negative association between voice responses and ADOS-2 scores ($\rho = -.19$, $p = .08$) was not significant after adjusting for GA.

Conclusion

Preterm children showed reduced neural tuning to voices, but not to faces, alongside diminished neural responses to emotional voices.

Relevance to NIDCAP

These findings help to pinpoint altered neural responses as a potential mechanism underlying socio-emotional vulnerabilities in preterm children. Importantly, they suggest that such alterations may arise not only from biological immaturity, but also from atypical auditory and premature visual stimulation in the NICU environment. The absence of correlations with prematurity indices further underscores the role of modifiable environmental factors. As such, this research not only contributes to our understanding of socio-emotional and communicative development in preterm children, but also offers a valuable paradigm for identifying both at-risk individuals and at-risk environments early in development. These findings underscore the critical role of a language-rich, socially responsive environment in shaping early neural pathways that support later socio-emotional and communicative development—highlighting principles long embraced within the NIDCAP approach.

NeuronN-QI: Nurse Perspectives on a Multimodal Intervention to Enhance Preterm Infants Neurodevelopment in the NICU

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Background

The Newborn Intensive Care Unit (NICU) environment exposes preterm infants to stimuli that may be inappropriate for their developmental stage, potentially affecting brain development and long-term outcomes. The NeuroN-QI pilot study (ClinicalTrials.gov Identifier: NCT04593095) - aligned with Newborn Individualized Developmental Care and Assessment Program (NIDCAP) principles - aimed to optimize outcomes for preterm infants by evaluating a multimodal intervention. This intervention included skin-to-skin contact, auditory and olfactory stimulation, a calm and rest period, and exposure to controlled lighting and sound levels.[1]

Aims

An objective of this pilot study was to assess the nurses' acceptability and feasibility of the NeuroN-QI intervention, as well as their knowledge and perceptions of its individual components.

Methods

A total of 53 nurses with a minimum of six months of NICU experience were recruited from two level-III NICUs in Canada. Neonatal nurses completed a 9-item questionnaire to assess the acceptability and feasibility of the intervention (score range 9-45) with higher scores indicating greater acceptability and feasibility. Additionally, nurses completed a 51-item questionnaire evaluating their knowledge and perceptions of each intervention component (score range 51-255) with higher scores reflecting more favorable knowledge and perceptions.

Findings

Nurses reported that the NeuroN-QI intervention was both acceptable (mean score = 40.06) and feasible (mean score = 38.96). Their knowledge and perceptions of the intervention's components were also favorable (mean score = 195.00). Among the different developmental care practices, skin-to-skin contact received the highest favorable mean score, while olfactory stimulation was rated the least favorably.

Conclusions

Nurses found the NeuroN-QI intervention both acceptable and feasible, particularly for components like skin-to-skin contact. However, gaps in knowledge and training - especially for olfactory stimulation—highlight the need for targeted education. These findings support the feasibility of implementing a full-scale NeuroN-QI study in NICUs to enhance neurodevelopmental outcomes in preterm infants.

Relevance to NIDCAP

The NeuroN-QI intervention aligns closely with the principles of NIDCAP, which emphasizes individualized, developmentally supportive care in the NICU. Both approaches aim to reduce stress and promote optimal neurodevelopment by modifying the environment and caregiving practices to meet the specific needs of preterm infants. By incorporating elements such as skin-to-skin contact, positive sensory stimulation, rest period, the NeuroN-QI builds on NIDCAP's foundation, offering a structured, multimodal strategy that supports both infants' neurodevelopmental outcomes and the caregiving experience of NICU nurses.

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Barriers and Facilitators to Kangaroo Care in Portuguese NICUs: A Cross-Sectional Study with Health Professionals

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Background

Kangaroo care (KC) is recommended as an essential component of newborns' individualized family-centered care as it has proven to be a low-cost intervention associated with multiple benefits, including reduced mortality, reduced pain and stress, improved attachment and prolonged breastfeeding. The World Health Organization and the European Standards of Care for Newborn Health recommend initiating KC as early as possible after birth for all preterm and LBW infants. However, we have been observing considerable variation across centers in our country.

Aims

This study aims to understand the perspectives of the professionals involved in newborn care, both doctors and nurses, and identify barriers to KC in Portuguese neonatal units. These results will then allow the São João NIDCAP Training Center to adjust its educational strategy.

Methods

We conducted a cross-sectional study with an online, anonymous questionnaire via Google Forms. The NIDCAP training center developed a 32-question questionnaire based on previously published literature on barriers to KC. The conceptual questionnaire was pilot-tested by two neonatologists and three nurses for clarity and content. The final version of the questionnaire was disseminated via email by the Portuguese Neonatology Society and via newsletter by the Portuguese Nurses' Association. The study population included paediatricians working in neonatology, neonatologists and neonatal nurses.

Results

We received 91 responses to the questionnaire, of which 65% were nurses and 35% were doctors. All professionals reported working in neonatology, 81% in level III NICUs. Regarding professional experience, 57% had worked in neonatology for more than 10 years, and 23% for less than five years. Most professionals (70%) reported previous training in neurodevelopmental-centered care.

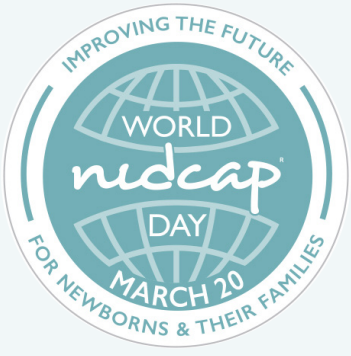
KC guidelines were available for 79% of the professionals in the NICU and 43% in the delivery room. Eighty-nine percent informed parents about KC, but only 33% provided written information on KC. Most professionals encouraged both mothers and fathers to practice KC, and 83% reported initiating KC within the first 24 hours of life in babies with KC-relevant clinical conditions.

The benefits of KC were recognized by most professionals. However, 22% considered KC should not be performed in infants with umbilical lines, 4% in intubated infants and 4% in infants with less than 1000g.

Regarding barriers to KC, 54% reported concern about accidental extubation, 44% about vascular access displacement, 36% about lack of privacy, 34% about lack of time, 50% about the need for training, 37% about the absence of protocols, and 19% about family reluctance to perform KC.

Conclusions and relevance to NIDCAP

This study provides insight into the barriers that Portuguese doctors and nurses encounter in implementing KC. Despite most professionals reporting some neurodevelopmental centered care, a significant number of professionals asked for additional training and clear protocols. Future educational programs should address these barriers by providing specific KC practice and simulation, detailed protocols for professionals that can be adapted to local settings, and written information for parents.



Parental Stress Three to Five Years After Preterm Birth: A Pilot Study

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Background

Preterm birth is recognized as a parental stressor since it is an important cause of childhood morbidity and mortality. Some of these problems can be life-long, which could mean that parents not only experience higher stress in the newborn period, but throughout life. Parental stress has been shown to affect parent-child interactions and a child's behaviour and development.

Aims

This study aims to characterize parental stress in mothers and fathers of preschool-aged children born prematurely and to correlate it with clinical neonatal outcomes and sociodemographic characteristics of the parents. These results would then serve to adjust the follow-up strategy and family support at our center.

Methods

Parents (mother and/or father) of children born less than 32 weeks of gestational age were included in the study if all of the following inclusion criteria were accomplished: (1) newborn admission at our center, a level III NICU in Portugal; (2) follow-up by the Neonatology team since hospital discharge; (3) child aged three, four or five years. Parents of children with major congenital abnormalities were excluded.

To assess parental stress, parents were asked to complete the Portuguese version of the Parental Stress Index - short form (PSI-SF). Clinical neonatal outcomes and sociodemographic information were obtained through medical records.

Results

From the initial sample of 40 families who met the inclusion criteria, 20 responses from 15 families were obtained: 13 from mothers and 7 from fathers. The mean infant gestational age was 28.5 (±2.26) weeks.

Total stress ranged from the 6th percentile to the 99th percentile, with a mean score of 77.5 (±18.3), which corresponds to the 73rd percentile and is a typical stress level. Eight parents (40%) scored above the 80th percentile, of which two mothers and one father scored above the 90th percentile, revealing a clinically significant level of stress. Mothers, on average, scored higher (75th percentile) than fathers (65th percentile), but the difference was not clinically or statistically significant. The impact of the child's neurodevelopment on parental stress, as measured by the Griffiths Mental Development Score at two years of age, showed a negative correlation (Pearson's Coefficient = -0.234). Still, it was not statistically significant ($p = 0.320$). No statistically significant differences were found in clinical outcomes or sociodemographic characteristics between high-scoring and normal-scoring parents.

Conclusions and relevance to NIDCAP

In conclusion, three to five years after preterm birth, parents seem to have, on average, a standard stress score. However, this does not mean prematurity has no impact on parents´ feelings and quality of life. The already existing perception of health professionals and interventions aimed at reducing it can have its intended impact, resulting in healthier transitions to parenthood, so that after three years, the possible effects are mitigated in most parents.

Still, the systematic application of a parental stress evaluation as part of the child´s follow-up after preterm birth might be helpful to identify those parents with significant stress levels requiring additional support to prevent the potential impact of this stress on their lives and on their family.

Improving Parental Engagement in NICU Support Groups: A Quality Improvement Project of the "Cake and Chat" Sessions

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Background

Newborn Intensive Care Units (NICU) have been reported to be one of the most stressful places for parents. Psychological support for families in such an environment is, therefore, vital during their emotionally intense and uncertain times. Support groups for families are a valuable space for parents and primary caregivers to access support, share their experiences, and hear from other parents. Although a support group, 'Cake and Chat', has been in place at Cambridge University Hospital since 2013, attendance by parents has decreased over time. In alignment with NICE (National Institute for Health and Care Excellence) guidelines and the Infant and Family-Centered Developmental Care (IFCDC) philosophy, a quality improvement (QI) initiative was launched to explore and address the barriers and facilitators to parental participation in these sessions.

Aim

The primary aim of the project was to increase parental attendance in the "Cake and Chat" sessions by 50% by identifying and addressing barriers and facilitators to engagement over eight months (June-December 2024) through parent surveys and session feedback. The supplementary aim was to enhance parent well-being, provide emotional support, strengthen connections, and empower parents in their roles within the NICU by understanding parental preferences for session content and structure, and to evaluate the perceived value of these sessions.

Methods

Using the Plan-Do-Study-Act (PDSA) model, this project employed a root cause analysis and a Pareto chart to identify key barriers. Data collection included verbal feedback from parents and attendance charts. Posters, cotside communications, and personalised invitations were introduced to improve awareness. Sessions were held in the parent room, and refreshments were provided to enhance the atmosphere. Content was adjusted based on parental input, with some sessions tailored to specific diagnoses.

Change Ideas: Three main change ideas were tested:

1. Enhancing information dissemination through posters, cotside conversations, and parent information board.
2. Offering focused group sessions to improve relevance and connection among participants.
3. Restructuring sessions into two formats, well-being and coaching, based on expressed parental preferences.

Results

Results indicated modest improvements in attendance (50%) following these interventions. Parents responded positively to increased information, with noticeable improvement in participation when reminded verbally or through posters. Sessions tailored to provide additional support to parents of babies with specific diagnoses were meaningful in fostering a sense of shared experience. Feedback highlighted that those sessions held during or clashing with visiting hours impeded attendance, and the rapid turnover of NICU admissions made consistent tracking of the impact challenging.

Despite positive feedback on the perceived value of these sessions, not all external barriers could be addressed within the project's scope. Parental engagement improved when sessions were aligned with their informational and emotional needs. Themes identified for more tailored support included parent coaching sessions on care-plan skills, understanding parenting roles in the NICU, and support for parents during transitions from the NICU.

Conclusions

While attendance sustainability was not achieved, actionable insights were identified to support ongoing improvement. Future cycles will focus on a flexible, tailored approach, distinguishing between well-being and parent coaching sessions, which were found to be more meaningful. Next steps will include alternating session times, formal separation of well-being and coaching topics, sessions preparing parents before transition and sensitising staff about their role in these sessions.

Relevance to NIDCAP

This project aligns with NIDCAP principles through its emphasis on individualised, relationship-based care that supports psychological support for the parental role within the NICU environment. By structuring need-based parent sessions, the project promotes the developmental care framework and reflects the NIDCAP model's commitment to individualised support strategies responsive to both infant and parental needs.

Implementing Parental Book Reading in a Multicultural Level 4 Neonatal Intensive Care Unit to Promote Infant and Family Centered Developmental Care (IFCDC) and Parent-Infant Bonding

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Background

Infant and Family-Centered Developmental Care (IFCDC) is a comprehensive approach that integrates neurodevelopmental support with active family involvement in newborn care.[1] In our 42-bed Regional Level 4 Newborn Intensive Care Unit (NICU), staffed by a multinational workforce of over 250 healthcare professionals, serving critically ill newborns from diverse cultural and linguistic backgrounds, parental cultural and language diversity, varied parental engagement and limited parental awareness of IFCDC, posed challenges to consistent IFCDC implementation. Research indicates that reading aloud to infants, even during the newborn period, supports early brain development, fosters language acquisition, and strengthens parent-infant bonding.[2,3,4] It has been demonstrated that newborns recognize their mother's voice from the womb, and premature infants respond to their mother's taped voice with physiological and behavioral changes.[5,6] Despite strong evidence that reading aloud to preterm infants enhances brain development and strengthens parent-infant bonding, it was not being practised by parents in our NICU.

Aim

A Quality Improvement Project (QIP) to implement a culturally inclusive parental reading to babies in NICU that:

- Promotes parental reading to babies as a routine practice in NICU.
- Enhances parent-infant bonding through reading.
- Increase parental engagement in caregiving.
- Embeds IFCDC principles into daily care.
- And to evaluate the impact of the intervention on parental experiences and infant interaction.

Methods

Using the Plan-Do-Study-Act (PDSA) framework, a multidisciplinary team of NICU health care providers launched the "Read, Speak, Sing to NICU Babies" program in 2024. Key interventions implemented as a part of this QIP are listed in Figure 1.

Results

During the two-week worldwide Read-a-Thon competition, 40% of NICU families participated, logging a total of 1,616 minutes of reading to their babies. Their collective efforts were acknowledged with a participation certificate (figure). Preliminary feedback from the qualitative parent feedback (n = 15; two non-responders) showed that 90% felt more emotionally connected to their baby, 100% found reading calming and empowering, and 70% felt more involved and confident in caregiving

Staff reported increased satisfaction, rewarding experience and stronger partnerships with families. Reported barriers included time constraints, emotional stressors, and inconsistent staff promotion during high-acuity periods. Work is ongoing to integrate reading activities into routine care and strengthen staff education and participation.

Conclusion

The "Read, Speak, Sing" initiative is a feasible, culturally adaptable, and cost-effective IFCDC intervention that demonstrated early success in promoting IFCDC in a multicultural NICU. Early outcomes suggest improved parent-infant bonding and increased parental engagement through this low-cost, sustainable intervention. The model has potential for broader adoption in similar multicultural NICU settings, aiming to enhance parent-infant connection and developmental care. Plans include refinement based on family feedback, re-evaluation at one-year intervals and also expansion of the mobile NICU library to the additional NICU location.

Relevance to NIDCAP

This project exemplifies NIDCAP principles by integrating individualized, neurodevelopmentally supportive, and family-centered care practices through multilingual culturally

Figure 1: "Read, Speak, Sing to NICU Babies" program key initiatives

Parent Education	• Multilingual easy to follow parent education flyers on benefits and techniques of reading to their baby, and·face-to-face parental guidance • Promotion through IFCDC bedside rounds, NICU Special day events, parent support group meetings and hospital newsletters
Staff Engagement	• Staff educaltion to encourage and promote parental reading to NICU infants • Invited staff donation of books • Created a flyer encouraging staff to donate gently used or new books • Promotional campaign wilth personalized stamps acknowledging staff donors
NICU Library Creation	• Creation of a mobile NICU library on wheels which was inaugurated by our ex-NICU graduate • Stocked library with multilingual, culturally inclusive, developmentally appropriate, wipe clean baby books and QR-linked digital resources • Created an inventory of books with assistance of hospital librarian • Designation of NICU staff as "bedside librarians" to manage the library and guide families
Community & Hospital Library Involvement Infection Control Measures	• Partnership with hospital and the community library • Partnered with the hospital infection control team and insured strict book hygiene and infection control precautions are in place for maintenance of the library books
Family Engagement Activities	• Launch of a two-week global Little Readers "Read-a-Thon" parental reading to baby competition to foster the love of reading to families

inclusive developmentally appropriate book reading. It actively empowers parents to engage in caregiving, fostering parent-infant emotional connection and parent confidence. It also directly supports the NIDCAP vision of parents as primary nurturers and values the infant's cultural and familial context, enhancing culturally tailored individualized support in a multicultural NICU. This initiative also aligns with NIDCAP's cue-based caregiving, advocating for minimizing stress and promoting developmentally appropriate sensory input of parental sound, touch and scent. It also promotes interdisciplinary teamwork and collaborative implementation, involving nurses, physicians, therapists, infection control, librarians, and families.

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Implementation of a Multi-Disciplinary, Culturally Sensitive Parent Support Program to Enhance Infant and Family-Centered Developmental Care (IFCDC) in a Multicultural Level 4 Newborn Intensive Care Unit

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Background

Our 42-bed Level 4 Newborn Intensive Care Unit (NICU), a regional referral center, staffed by over 250 multidisciplinary professionals, provides care to critically ill newborns from diverse cultural and linguistic backgrounds and often faces inconsistent uptake of Infant and Family-Centered Developmental Care (IFCDC) practices and varied parental engagement. Post-discharge professional home care support is also scarce in our region.

Parents of infants admitted to NICU often experience high levels of psychological and emotional distress exacerbated by financial challenges.[1,2] In multicultural settings, this distress can be influenced by varied cultural expectations and language barriers and limited structured support. Parent support programs, especially peer support programs, have been shown to provide and promote emotional reassurance and coping strategies, enhancing caregiving confidence and improving outcomes.[4,5] Recognizing the critical role of parental emotional and peer support in promoting IFCDC, we aimed to develop and implement a culturally sensitive Parent Support Program

Objectives

To design, implement, and evaluate a structured, inclusive multidisciplinary Parent Support Program to enhance parental emotional support, caregiving confidence, parental engagement and integration into NICU care practices, thereby strengthening IFCDC, whilst reducing parental isolation and anxiety during and after NICU stay.

Methods

Using the Plan-Do-Study-Act (PDSA) model, we launched the 'Sidra Neonatal Unit Group Support' (SNUGS) in 2022. Initial efforts included in-person support sessions and multilingual information flyers. In 2023, the program was expanded with a series of culturally sensitive Quality Improvement (QI) interventions to improve parental awareness of the Parent support group, promotional strategies to enhance parental engagement, initiatives and educational topics tailored to the needs of the attendees. The phased interventions are listed in Figure 1. Feedback was collected through surveys, reflections, and attendance records.

Results

Initial audits in 2022 revealed low attendance, attributed to limited awareness and promotion. However, after the 2023–2024 QI interventions, attendance steadily increased across 11 SNUGS sessions, from one to four and up to 15 parents per session, representing diverse cultural and linguistic backgrounds. An increasing number of extended family members have been attending.

Session content included education on Family Centered Care (FCC) principles, bedside FCC tools, parental care-giving role, and emotional well-being strategies. Thematic events aligned with NICU milestones were particularly well received.

Parent feedback was positive and collated as;

- Increased awareness of the parent support program and the available NICU parent support resources.
- Greater understanding of the importance of parental roles in caregiving.
- Increased confidence in caregiving tasks and parent-infant bonding activities.
- Increased understanding of and engagement in practices such as skin-to-skin care and breastfeeding, and how to increase breast milk.
- Positive testimonials highlighted feelings of empowerment, reduced isolation and anxiety, emotional reassurance, enhanced parent confidence, relaxation, high levels of satisfaction and gratitude towards the NICU team for the care received.

Relevance to NIDCAP

The SNUGS program enhances parental engagement, emotional-psychological support to families, caregiving

Figure 1: Summary Of Phased PDSA Interventions For 'SIDRA Neonatal Unit Group Support' QIs By Timeframe.

Phase	Timeframe	Key Interventions
Launch (Year 1)	2022	• In-person support sessions • Multilingual parent information flyers & formal invitations • Creative banner designed by staff • Translator support for sessions
Expansion	2023	• Regional language speaking SNUGS staff lead • Veteran parent involvement • Nurse co-led sessions, nurse empowerment approach • Non-clinical garden venue & refreshments • Dedicated departmental funding for refreshments & resources • Creation of an officially approved invitational flyer for parents • Informal approach during sessions • Structured inclusion of parent educational topics; IFCDC practices, IFCDC bedside tools, benefits of skin-to-skin care, breast feeding, parental engagement and involvement in care • Translator support for sessions • Multidisciplinary staff representation at sessions (social worker, lactation consultants, Neonatologists, Neonatal nurse practitioners, clinical nurse leaders, clinical nurses, Allied health team, maternity staff)
Expansion	2024	• Inclusion of extended family and siblings • Themed sessions aligned with NICU special occasions (Mother's Day, Father's Day, NICU Awareness Day, International Kangaroo Care Day, Pain awareness week) • Promotion of Parent support group during IFCDC rounds • Reminder messaging of sessions via NICU communication platforms • Creation of an Attendance log book and recording of minutes • Parent Educational topics tailored to suit the parental audience • Suggestion box for receiving free text parental feedback • Formal parental feedback questionnaire • Promotion of the support group via hospital newsletter • Structured template to standardize sessions • Opportunity for Parent story and sharing of Parental experiences
Ongoing	2025	• Staff participant appreciation tokens and certificates • Themed sessions for cultural special days (Ramadan & Eid) • Inclusion of parent-infant bonding practices (eg NICU Mobile library, Parental Reading to infants)

confidence, and recognizing the central role of parents as primary caregivers, empowering parents to understand and participate actively in care. These are core components of NIDCAP. The program's culturally sensitive, inclusive approach respects family diversity. It is a multidisciplinary support program in which professionals from various backgrounds work collaboratively to support both infants and families, in keeping with NIDCAP's interdisciplinary approach to developmental care.

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Occupational Stress and its Relation to Self-Compassion Among Nurses Working in Newborn Intensive Care Units in Iran

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Background

Stress is one of the most underappreciated yet consequential issues that nurses face in their profession, particularly affecting hospital-based nurses. Nurses are crucial members of the healthcare team responsible for the physical, psychosocial, and developmental care of newborn infants, as well as for supporting parents in newborn intensive care units (NICUs). In alignment with the goals and priorities of the Iranian Neonatal Health Administration, the implementation of the NIDCAP (Newborn Individualized Developmental Care and Assessment Program) model is essential. This model requires nurses to be able to provide self-compassionate care, enabling them to communicate empathetically and compassionately with infants and their families in NICUs. It is vital to examine occupational stress, as it poses a significant threat to the health of the nursing workforce and, consequently, to the health of our nation.

Aims

This study aimed to assess occupational stress and its relationship with self-compassion among NICU nurses across Iran during 2018-2021.

Methods

This quantitative, cross-sectional design study utilized a descriptive-correlational method and involved 507 NICU nurses from educational and medical centers in Iran, using multistage cluster random sampling. Data collection was facilitated through collaboration with the Neonatal Health Office of the Ministry of Health and provincial NICU units. Data were gathered using a three-part questionnaire that included demographic information, the Nursing Stress Scale (NSS), and Neff's Self-Compassion Scale (SCS). The data were then analyzed using SPSS version 19, employing descriptive and inferential statistics, including the Pearson correlation coefficient and multiple regression analysis.

Results

The results of this study revealed that most participating nurses were female, aged 31 to 40, married, had a bachelor's degree, were officially employed, and worked rotating shifts, averaging 173.63 working hours per month (SD = 40.07). Additionally, the results showed that only 2% of nurses experienced low occupational stress, while 99.8% reported moderate to high stress, primarily related to "Death & Dying." Meanwhile, 3.4% of participants reported low self-compassion, 63.3% moderate, and 33.3% high. This study also revealed a significant negative relationship between self-compassion and occupational stress ($r = -0.188$, $p < 0.01$). Finally, the results indicated that self-compassion could predict 17% of the variance in occupational stress levels.

Conclusion

Based on the results of this study, occupational stress among NICU nurses was found to be high, with self-compassion identified as a significant predictor of their stress levels. Excessive stress can compromise nurses' health and, consequently, affect the quality of care, particularly in high-demand settings such as NICUs. Therefore, researchers recommend that healthcare administrators implement strategies to mitigate workplace stressors and enhance nurses' self-compassion. Training and support programs aimed at fostering self-compassion have the potential to improve stress management, enabling nurses to provide more compassionate and empathetic care in alignment with infant and family-centered developmental care. Such interventions are crucial in advancing the goals of the NIDCAP model, particularly in promoting healthy neurodevelopmental outcomes for preterm newborn infants.

Relevance to NIDCAP

Considering the health of nurses is crucial for providing high-quality, family-centered care according to the NIDCAP model. This approach emphasizes individualized support for premature infants and their families. Consequently, focusing on health and reducing job stress among nurses, as identified in this study, plays a vital role, as high stress can impair their ability to connect with infants and families. Encouraging self-compassion among nurses can help them manage stress better and improve their mental health. This, in turn, strengthens their emotional availability and enhances their ability to deliver attuned and coordinated care, which are key aspects of the NIDCAP approach. As a result, healthy nurses are essential for the successful implementation of the NIDCAP model.

Immediate Kangaroo Mother Care Was More Feasible for Preterm Infants After Vaginal than Caesarean Deliveries in a Spanish Neonatal Unit

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Background

Immediate Kangaroo Mother Care (iKMC) involves placing a newborn directly on the mother's bare chest shortly after birth. In 2022, the World Health Organization recommended extending immediate KMC to preterm and low birth weight infants due to its proven benefits, including thermal regulation, cardiorespiratory stability, and enhanced bonding. Despite these recommendations, iKMC is still not widely implemented for preterm infants in many hospitals, leading to frequent mother-infant separation at birth.

Aim

To evaluate the feasibility of initiating iKMC and to describe the process, challenges, and outcomes associated with its implementation.

Methods

A quality improvement strategy was used in the NICU of the 12 de Octubre University Hospital in Madrid. The study focused on preterm infants born between 28 and 36 weeks, who weighed <1800 grams.

Results

From June 2023 to September 2024, 96 newborns were identified as candidates for iKMC. Of these, 37 were excluded based on predefined clinical criteria, and 12 did not receive iKMC due to staff workload, resulting in a final sample of 47 infants. For infants born <32 weeks or weighing <1500 grams, stabilization involved the use of a polyethene bag and delayed cord clamping. iKMC was initiated as early as possible, preferably with the mother.

Early interruption of KMC (before 20 minutes) occurred in four cases: two due to hypothermia in infants weighing less than 1000 grams and two due to technical issues or staff pressure. Notably, no interruptions were related to respiratory deterioration. iKMC was initiated at a median of 10 minutes after birth, earlier than reported in previous studies. The overall early interruption rate was below 10%. Only 33.3% of infants were transferred to the NICU in incubators, while most were transferred skin-to-skin, predominantly with fathers (73.1%). Caesarean deliveries were associated with shorter KMC durations due to the need to transfer mothers to postoperative care units, which lacked staff trained in preterm infant care.

Table 1: Results

	Global sample (n=47)	Infants <3weeks or <1000 grams (n=10)	Infants ≥30 weeks and ≥1000 grams (n=37)	P value
Gestation, weeks+days,	33+1 (31+0-33+5)	29+3 (28+6-31+3)	33+2 (32+2-33+5)	
Weight, grams, median [IQR]	1600 (1200-1810)	930 (860-1050)	1680 (1440-1890)	
Caesarean, n (%)	22 (46.8%)	8 (80.0%)	14 (37.8%)	**0.02**
iKMC initiation, minutes, median [IQR]	10 (5.5-14)	13 (9-21)	9 (3-12)	**0.01**
iKMC duration, minutes median [IQR]	25 (20-108)	20(20-25)	30(20-115)	**0.02**
NIMV during iKMC, n (%)	30(63.8%)	10(100%)	20(54.1%)	**<0.01**
iKMC with mother, n (%)	43(91.5%)	9(90.0%)	34(91.9%)	0.77
iKMC start temperature, oC, median [IQR])	36.8 (36.6-37.2)	36.7 (36.4-36.9)	36.9 (36.6-37.3)	0.19
NICU admission temperature, oC, median [IQR]	36.9 (36.5-37)	36.4(36.1-37)	36.9 (36.7-37.1)	0.07
iKMC interrupted for <20 minutes, n(%)	4(8.5%)	2(20.0%)	2(5.4%)	0.14
Colostrum collection during iKMC, n(%)	7(15.6%)	0(0.0%)	7(20.0%)	0.12

Bold fonts indicate statistically significant results. IQR: interquartile range. NIMV: non-invasive mechanical ventilation. iKMC : immediate KMC

Continued on p.24

Conclusion

The implementation of iKMC in preterm infants born at 28 weeks or more was feasible, particularly following vaginal births, which allowed for direct transfer to the NICU without separation. The involvement of a multidisciplinary team was essential for the success of iKMC. Further steps include promoting continuous KMC through family-centered care models, such as Couplet Care, and reinforcing a zero-separation policy. The transition to family rooms in December 2026 is expected to support these goals and enhance the quality of care for preterm infants and their families.

Relevance to NIDCAP

iKMC and the NIDCAP approach share a common goal: providing individualized, developmentally supportive care that respects the needs of both preterm infants and their families. iKMC has been shown to promote physiological stability, thermoregulation, and bonding from the very first moments after birth, thereby reducing the negative impact of mother-infant separation.

Longitudinal Care Program for Families and Patients With Surgical Malformations in a NIDCAP Training Center

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Introduction

An increasing number of studies raise concerns about the neurodevelopment of newborns with malformities requiring surgery. While care in the NICU is essential for survival, the environment and stimulation in the NICU can negatively affect the infant's development.

Newborns with congenital heart disease (CHD) and congenital diaphragmatic hernia (CDH) share features such as delayed brain maturation, cardiopulmonary instability, altered blood flow, and comorbidities. Many undergo neonatal surgery, require sedation, or have prolonged hospital stays. Individualized developmental care can help reduce the mismatch between the needs of the infant's brain and the NICU environment.

Aims

This study aims to report on the experience in the management (prenatal, during admission and follow-up) of term newborns with CDH and CHD at the Hospital Sant Joan de Déu in Barcelona, where the NIDCAP Training Center there offers progressive implementation of NIDCAP care and structured family-centred follow-up programs.

Methods

We conducted a descriptive analysis of NIDCAP care in full-term infants with CDH and/or CHD admitted to our center, from 1 January 2022 to 31 December 2024. Specialized prenatal consultations for CDH/CHD are offered. The Neonatal Unit consists of 44 rooms: 26 for intensive care (16 single, two double, two triple) and 18 intermediate care (10 single, two double, one quadruple). There are four rooms for surgery, two of which are equipped for ECMO.

Table 1: Relevant clinical data

	CHD n=273	CDH n=27
ECMO (n patients)	9	6
Surgery CEC No CEC	87 54 33	25
LOS days (median, min-max)	17 (4-465)	44.5 (17-277)
Mortality (n patients)	14	5

Findings

Malformative pathology was the second cause of admission, preceded by prematurity. There were 1,869 term newborns admitted (mean birth weight: 3.256 ± 1.680 g). In newborns with CHD, the most frequent defects were: intraventricular defect (n=46), transposition of the great arteries (n=33), atrioventricular canal defect (n=22), aortic arch pathology (n=20).

In CDH and CHD patients, developmental care starts before birth, with multidisciplinary visits including fetal medicine specialists, neonatologists, surgeons, social workers and psychologists. Specific pathology of the child and the expected postnatal outcome are explained. Breastfeeding support, involvement in the newborn's care, bringing their clothes, and preparing a muslin scented with the mother's scent to wrap the babies during transport. Moreover, families are invited to visit the NICU.

NIDCAP care provided:

Actions for attachment

- Parents' actions in the delivery room (see, touch, speak, smell).
- Skin-to-skin in the delivery room, also for intubated infants.
- Joint admission within the first 24 hours with the mother if possible
- Kangaroo Care, as soon as clinical stability permits, is encouraged and supported.
- Encourage parents to touch the baby or help with their hands
- Protection of breastfeeding

Cue-based care; sensitive care with attention to the newborn's language. Timing and sequencing of caregiving interactions.

Support self regulation

- Reducing negative environmental stimuli
- Pain prevention or management
- Control of environmental stimuli (light, noise levels, muslin with mother's smell)
- Sleep protection
- Own clothes

Positioning and motor support

- Boundaries for containment
- Therapeutic positioning

Care for patients and their families does not end when they are discharged from the Neonatal Unit, as there are specific follow-up programs.

Conclusion

Admission of term newborns with surgical conditions to the NICU, together with other neonatal conditions such as prematurity, growth retardation, etc., favours the application of care based on NIDCAP philosophy to these highly vulnerable patients.

Relevance to NIDCAP

NIDCAP Care can be applied to newborns requiring surgery, not just premature newborns.

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NIDCAP Care in the Moment

Comfort in Israel

Effect of Individualized Developmental Care in Very Low Birth Weight Infants: Protocol for a Stepped-Wedge Cluster Randomized Trial

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Background

Very low birth weight infants (VLBWIs), defined as newborns weighing less than 1500 grams at birth, face heightened risks of neurodevelopmental delays, medical complications, and extended hospital stays. These vulnerabilities are exacerbated by the stressors of Newborn Intensive Care Units (NICUs), especially in resource-constrained settings. While individualized developmental care (IDC) models such as those advocated by the Newborn Individualized Developmental Care and Assessment Program (NIDCAP) have demonstrated benefits in high-income countries, evidence from low-resource regions remains limited.

Aim

This study aims to assess the effectiveness and scalability of a multimodal IDC intervention in improving outcomes for VLBWIs in China.

Methods

We are conducting a stepped-wedge cluster randomized trial (SW-CRT) across 43 tertiary-level NICUs located in 36 cities and municipalities throughout China. The study population includes VLBWIs admitted within 24 hours of birth, with a birth weight under 1500 g. Each NICU will transition from control to intervention phases in a randomized sequence over a 26-month period. The IDC intervention bundle consists of 11 evidence-informed components tailored to the Chinese NICU context, including but not limited to kangaroo care, light and noise regulation, individualized positioning, enhanced parental involvement, and supportive feeding strategies. The primary outcome is the length of hospital stay (LOS). Secondary outcomes include clinical measures (bronchopulmonary dysplasia, retinopathy of prematurity, necrotizing enterocolitis, intraventricular haemorrhage), neurodevelopmental outcomes at discharge (assessed via the Test of Infant Motor Performance, TIMP), quality of environmental care, parental satisfaction (measured using the EMPATHIC-30 questionnaire), and adherence to family-centered care principles. Quantitative analyses are conducted using multivariable regression models accounting for clustering and temporal trends. A parallel mixed-methods process evaluation explores implementation fidelity, staff perceptions, barriers, and facilitators.

Results/Findings

Preliminary data analysis is ongoing. Early qualitative insights suggest high acceptability of IDC practices among NICU staff and families, with particular emphasis on improved parental engagement and staff awareness of developmental needs. Implementation barriers include variability in staff training, resource availability, and differences in institutional culture across participating sites. Full quantitative findings, including impact on LOS and secondary clinical outcomes, will be available upon study completion and are expected to provide high-quality evidence supporting IDC implementation in Chinese NICUs.

Conclusion

This stepped-wedge cluster randomized trial represents one of the most extensive investigations into developmental care for VLBWIs in a low-resource setting. It is expected to yield robust evidence on the feasibility, effectiveness, and implementation dynamics of IDC strategies in Chinese NICUs. The results will guide the development of standardized, context-appropriate developmental care guidelines and support broader dissemination of NIDCAP-aligned practices in diverse global settings.

Relevance to NIDCAP

This trial is directly aligned with the core principles of NIDCAP, emphasizing individualized, developmentally supportive, and family-integrated care. By adapting and operationalizing IDC elements in an extensive, diverse network of Chinese NICUs, this study contributes to expanding the global relevance of NIDCAP. It demonstrates the potential for adaptation in low- and middle-income countries. The findings will provide actionable insights into scaling NIDCAP-informed practices in environments with limited resources and differing cultural expectations.

Integrating NIDCAP to Optimize Exclusive Breast Milk Feeding in Preterm Infants Across Ministry of Health NICUs

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Background

This quality improvement project, which was carried out at a Riyadh First Health Cluster tertiary hospital, aimed at enhancing exclusive breast milk (EBM) feeding rates in preterm infants (<2 kg) admitted to the Newborn Intensive Care Unit (NICU) by implementing clinical practices with the principles of the Newborn Individualized Developmental Care and Assessment Program (NIDCAP). The project has prioritized early maternal support, coordinated health care staff training, and standardized family-centered care protocols to improve neonatal outcomes and reduce formula feeding complications.

Aims

To (1) increase the rate of exclusive breast milk feeding from transitional care through to discharge for preterm infants with a birth weight of less than two kilograms, (2) reduce the rate of necrotizing enterocolitis (NEC), and (3) enhance maternal involvement and empowerment while the baby is in the NICU.

Methods

Inclusion criteria were preterm babies born with a birth weight of less than two kilograms and admitted to the NICU. Exclusion criteria were infants with metabolic diseases, those residing outside Riyadh, and cases where maternal medical conditions contraindicated breastfeeding.

A multidisciplinary team, including neonatologists, NICU nurses, lactation consultants, and hospital administrators, developed and implemented a standardized clinical pathway using NIDCAP principles. The interventions focused on antenatal counseling for high-risk pregnancy, initiation of milk expression within six hours after birth, and education of the mothers to continue expression 8–12 times daily. Infrastructure support included hospital-grade breast pumps, EBM containers, and temperature-controlled storage facilities.

Trained lactation nurses provided bedside education, emotional support, and hands-on instruction to help mothers stay informed, confident, and actively involved in caring for their infants throughout the NICU journey. Health care staff underwent formal education on handling of breast milk, effective maternal communication, and individualized lactation care measures. Systematic audits tracked key indicators, including EBM compliance, NEC rates, maternal involvement, and infant clinical outcomes. Audit results were regularly communicated to frontline staff to promote best practices and maintain sustained improvement.

Results

A total of 486 preterm infants were recruited into the project between 2019 and 2024. Adherence to exclusive breast milk feeding increased from 0% in 2019 to 82% in 2023 and 87% in 2024. The prevalence of NEC decreased from 8% in 2019 to 2% in 2023, and further to 1.9% in 2024. The number of mothers providing EBM increased from 17 in 2019 to 387 in 2023. Formula milk consumption decreased from 10 boxes per week to 2–3, demonstrating enhanced compliance with the protocol and greater cost-effectiveness.

Earlier initiation of full enteral feeding reduced central line dependency and parenteral nutrition duration, and was associated with fewer bloodstream infections, a shorter NICU stay, and improved bed turnover. All health staff achieved 100% of training requirements, and all eligible lactating mothers received lactation support during hospitalisation and after discharge.

Findings

This project demonstrated that NIDCAP-aligned care, which involves individually tailored maternal support, family involvement, and a developmentally supportive NICU environment, can significantly impact clinical and psychosocial outcomes. Staff reported more efficient workflows, improved interdisciplinary collaboration, and greater job satisfaction, driven by evident improvements in infant health and family involvement.

The initiative was successfully replicated across 33 tertiary Ministry of Health hospitals, where comparable improvements in EBM compliance were observed, validating its replicability and sustainability at the national level.

Conclusion

This project provides a scalable, sustainable model of family-centered neonatal care based on NIDCAP principles. By eliminating structural and emotional barriers to breast milk provision and integrating maternal support into routine practice in NICUs, the project significantly increased breastfeeding rates, neonatal outcomes, and maternal participation. It offers an implementable model for replication in NICUs nationwide.

Safe Touch and Individualized Support: Integrating NIDCAP-Based Care Strategies into Osteopathic Interventions

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Background

As widely recognized in developmental care, preterm infants are highly vulnerable to environmental stimuli and handling, which may trigger stress and impact neurodevelopment. Supporting their ability to self-regulate is therefore essential. Osteopathy is a gentle, non-invasive manual therapy aimed at improving mobility and addressing somatic dysfunctions—areas of the body with tension and reduced mobility. In neonatology, somatic dysfunctions have been documented in preterm infants.[1,2] Studies from Italy have reported beneficial effects of osteopathic interventions (OI), including reduced hospital stay,[3] improved digestive comfort,[4] and earlier acquisition of respiratory and feeding autonomy.[5,6] However, little is known about how preterm infants tolerate these interventions or how they respond in terms of physiobehavioral stress indicators, such as heart rate.

Aims

This study is the first to evaluate the immediate and short-term heart rate responses to OI provided in a pragmatic neonatal setting in Quebec, Canada. Crucially, the osteopathic model used in this research incorporated neuroprotective strategies (NPS) inspired by NIDCAP-based care, such as cue-based handling, slow transitions, and containment. These strategies were used to promote safety and soothe the infant during and after the intervention, in line with the principles of individualized developmental care as outlined in the NIDCAP model.

The primary objective was to evaluate the tolerance of OI+NPS compared with usual non-invasive care (UC+NPS) using an intra-subject, longitudinal design based on heart rate responses.

Methods

Eleven very preterm infants (gestational age < 32 weeks) received osteopathic interventions integrating neuroprotective strategies (OI+NPS) throughout their hospitalization, as regularly as possible. To assess tolerance, these sessions were compared to reference periods of usual non-invasive care (UC+NPS), matched in frequency and timing, and randomly alternated. Each session was video-recorded, including the 10 minutes before and after. A total of 153 condition pairs (OI vs. UC) were analyzed. Heart rate data were extracted from the video recordings. Analyses included both individual-level visual inspection and group-level mixed-effects models.

Results/Findings

OI+NPS were well tolerated, with no adverse events reported, even among infants more vulnerable than those typically included in previous studies. A statistically significant reduction in mean heart rate (up to 4 bpm) was observed during and after the osteopathic interventions relative to baseline. This effect increased with postmenstrual age, suggesting a role in enhancing infants' calm and self-regulation. In contrast, UC+NPS showed no comparable heart rate variation. Notably, the difference between OI+NPS and UC+NPS became statistically significant at 33 weeks postmenstrual age, suggesting a maturation-related response, linked to the development of vagal function. A trend also indicated that the earlier the interventions were introduced during hospitalization, the better they were tolerated—supporting the potential relevance of early implementation.

Conclusion

Osteopathic interventions integrating neuroprotective strategies appear safe and well tolerated by very preterm infants. The heart rate reduction observed suggests a soothing effect and may reflect improved autonomic self-regulation. These findings validate the feasibility of this integrative approach and justify further research on its potential benefits. As heart rate reflects only one dimension of the infant's stress and regulation profile, additional analyses of behavioral and other physiological indicators are underway to explore further and consolidate these findings.

Relevance to NIDCAP

This research contributes to ongoing reflections on early interaction within a nurturing environment by exploring how OI—when combined with strategies grounded in NIDCAP-based care—can support safe, individualized, developmentally appropriate interactions for very preterm infants. This compatibility opens the possibility of using osteopathy not only as

a therapeutic intervention but also as a complementary tool to reinforce NIDCAP-based caregiving. By demonstrating both feasibility and physiological benefits, this work paves the way for interdisciplinary collaborations that strengthen the NIDCAP model through safe, regulated touch and individualized interaction.

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Bridging the Gap: Dissemination of Basic Developmental Care Practices Via a Self-Paced Online Course

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Background

Small and sick newborns are often at increased risk of neurodevelopmental delays or disabilities due to multiple factors including lack of developmentally supportive care in the neonatal intensive care (NICU).[1] Developmental care programs significantly enhance the knowledge and skills of NICU staff, enabling them to implement developmental care practices even in low-resource settings.[2-4]

Formal training in NIDCAP and FINE, among others, require significant mobilization of personnel and cost. In low-middle income countries where access to certified trainers is scarce, other training modalities may offer cost-effective solutions, providing accessible, affordable, and adaptable training to support the implementation of developmental care in resource-constrained settings

Aim

To provide an accessible, evidence-based developmental care course that builds the knowledge and skills of neonatal healthcare professionals working in low- and middle-income countries and limited resource settings.

Methods

Over the past five years, during national conferences, we have conducted workshops on developmental care in the NICU, targeting nurses and physicians to increase their knowledge and provide opportunities for hands-on practice. The workshop was offered virtually during the COVID-19 pandemic as part of the International Developmental Pediatric Association Congress. Both experiences highlighted the need to create a course that considers time management and cost containment. Four NIDCAP Professionals prepared the course content based on NIDCAP principles and developmental care programs. The initial course was placed on the university learning management system (LMS) targeting NICU nurses and doctors. The course was then revised after receiving feedback and suggestions from all participants at the hospital and those who attended the workshops during the conferences. The final course product became an interactive self-paced learning module on the LMS targeting health care professionals locally and regionally.

The course had four modules covering brain development, NIDCAP theory, infant behavior, and developmental care components, with a focus on low-cost implementation modalities. The interactive design, supported by H5P modality, included presentation, questions, videos, and resources. Participants completed a knowledge test before and after the course, and received a certificate of completion after completing the course evaluation. During the open course period, participants could post questions, which the team would answer within the next 48 hours. At the end of the self-paced course, an online webinar was held to address any remaining questions and gather participants' feedback.

(Continued on p. 30)

Results

From 2023 to 2025, 97 national and international health care professionals participated in the online courses. The overall average knowledge score increased from 65% to 95%. The participants found the course interesting, flexible and convenient. They affirmed that they planned to change their work practice and implement developmental care in their NICUs.

The qualitative feedback was positive. One said, *"Content is various, leading to a holistic view of neonatal care"*, another added, *"I think this activity should be accessible to all neonatal healthcare systems in Lebanon because we need such a program to be integrated in every hospital"*.

During the post-course webinars, we addressed participants' questions and discussed their shared experiences and challenges in implementing developmental care measures in their respective settings.

Conclusion

The course has proven effective in enhancing the knowledge and skills of neonatal healthcare providers and in promoting better developmental care practices in NICUs. However, challenges remain in implementing and sustaining these practices consistently across different settings, particularly in low-resource environments. Future efforts should focus on addressing these challenges through continued education, hands-on workshops, support, and resource allocation.

Relevance to NICDAP

This unique, self-paced course offers participants the opportunity to acquire basic knowledge and skills for applying developmental care in a simple, cost-effective manner in their respective settings.

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IMPROVING THE FUTURE
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FOR NEWBORNS & THEIR FAMILIES

nidcap FEDERATION INTERNATIONAL
voice of the newborn

Mission

The NFI improves the future for all infants in hospitals and their families with individualized, developmental, family-centered, research-based NIDCAP* care by providing and assuring the quality of NIDCAP education, training and certification for professionals and hospital systems. *(Adopted 31 June 2025)*

The Newborn Individualized Developmental Care and Assessment Program (NIDCAP) Model

- Infants are considered individuals, person, collaborators, in care, supported and nurtured by their parents enhancing their healthy overall development wellbeing and full potential.
- Families are considered infants key nurturers, advocates and primary caregivers as well as collaborators in care decisions.
- Infants, families and professionals are integral partners of the health care team.
- Hospital environment and culture supports and nurtures infant and family relationships, and promotes individualized strengths, health, growth, and development.
- The NFI provides the framework for NIDCAP care with educational resources formal training and mentoring to healthcare professionals and families.

Parental Participation During Medical Rounds on a Neonatal Intensive Care Unit: Experiences of Parents, Nurses and Physicians

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Background

In line with the European Foundation for the Care of Newborn Infants (EFCNI), we introduced parental attendance at daily medical rounds in our NICU to promote shared decision-making and family-centered care. Parental participation is not always straightforward and often requires preparation and support. Parents may feel uncertain about their role. Emotional distress, fear of receiving difficult information, and confusion due to medical jargon can hinder their engagement. However, when parents are informed in advance about the structure and purpose of medical rounds, and when professionals actively invite them into the conversation, their confidence and involvement increase. Nurses and physicians value parental involvement in NICU rounds, but face challenges with sensitive topics and time constraints. Despite this, they recognize that parental presence enhances trust, transparency, and individualized care.

Aims

After six months of implementation, we aimed to investigate the perceptions of parents, nurses, and physicians regarding parental participation during our medical rounds.

Method

Twice a week, we invited parents to attend medical rounds for their infant. These ward rounds were organized in a separate room on the ward. Parents were always accompanied by the nurse assigned to care for their infant at that moment. Residents or neonatologists discussed the infant. Afterwards, parents were asked to complete a questionnaire. The questionnaire consisted of 17 questions regarding their perception of the medical round, the communication, and the impact of their presence. Each question could be answered on a Likert scale as follows: totally agree (5) – agree – neutral - not agree – totally not agree (1). Nurses and physicians present during the medical round received a similar questionnaire to evaluate their experience. Their questionnaire consisted of 14 questions about their perceptions of the medical round, meeting dynamics, and communication. Each question could be answered on a Likert scale as follows: totally agree (5)– agree – neutral - not agree – totally not agree (1).

Results

Overall, 24 parents completed the questionnaire. Physicians and nurses completed the questionnaire 27 and 29 times, respectively. Parents felt welcome and listened to during the meeting (4.9, 4.6). However, too much medical jargon was used (3.3). Overall, the meeting met expectations (4.3) and improved understanding of the daily plan (4.5). Parents prefer regular participation (4.1). Physicians and nurses felt well-prepared for the meeting (4.8 and 4.2, respectively) and listened to parents (4.6 and 4.6, respectively). However, both groups found the use of medical jargon excessive (physicians 2.9, nurses 2.5). Physicians reported a low impact of new information shared by parents (2.9). Overall, the meeting met the expectations of physicians (4.3) and nurses (3.9), and both valued parents' presence (physicians 4.0, nurses 3.9). Nurses did not feel they had to hold back during the rounds (4.2).

Conclusion

Parental participation in NICU medical rounds is both feasible and valued by families and healthcare professionals. While parents feel welcomed and supported, communication barriers, particularly the use of medical jargon, remain a significant challenge. Nurses and physicians recognize the benefits of parental involvement, including improved transparency and alignment with family-centered care, but also report emotional and practical complexities. To optimize parental engagement, structured preparation, accessible communication, and a supportive team culture are essential. These findings underscore the importance of continued efforts to integrate parents as active partners in shared decision-making.

Relevance to NIDCAP

These findings align with the principles of the NIDCAP model, which emphasizes individualized, developmentally supportive, and family-centered care. Actively involving parents in medical rounds not only supports shared decision-making but also strengthens the parent-infant bond and enhances the collaborative care culture within the NICU, a care culture that views parents as primary caregivers.

Reflection – 36th NIDCAP Trainers Meeting and 2025 Swedish/Danish Conference on Ultra-Early Intervention, Copenhagen 2025

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In September 2025, I attended the NIDCAP Trainers Meeting in Copenhagen, Denmark, a gathering of neonatal professionals committed to advancing developmental and family-centred care. The final day was co-hosted by the NFI and the Swedish/Danish Ultra Early Conference. A defining element of the conference for me was the presentation by the mother of Vilgot, a boy born at 26 weeks' gestation in Sweden. Linnea Christenson's story provided a deeply moving account of the challenges and growth associated with extreme prematurity, particularly her reflections on "learning to live with what could have been." Her narrative was one of resilience, of the individuality of both her children, and of acceptance, mirroring NIDCAP's philosophy of recognising the unique strengths and needs of every infant and family.

Linnea's story elicited a strong emotional response. I felt deep empathy for the mother's vulnerability and courage as she described the ongoing process of adapting to life with a child with challenging medical issues due to premature birth. It reminded me of the long-term emotional impact families experience, often extending well beyond the neonatal period.

Complementing this, several evidence-based sessions expanded on related themes. The developmental walkthrough of NIDCAP and APIB observations presented by Juzer Tyebkhan, MD, from Edmonton, Canada, used the story of an infant born at 23 weeks to demonstrate the progression of autonomic, motor, and state maturity. Hugo Lagercrantz, PhD, from Sweden, gave a thought-provoking session on consciousness and neurodevelopment, exploring the idea that fetal consciousness emerges gradually, with signs of awareness potentially appearing as early as 24 weeks' gestation and continuing toward self-recognition around two years. It broadened my understanding of early awareness, reinforcing the ethical imperative to approach even the most premature infant as a sentient being capable of interaction and stress response.

In other sessions, Sari Alqvist-Bjorkroth, PhD from Finland, gave a talk on co-parenting, emphasising the importance of coordinated parental involvement and reflective communication. She explained that both parents must be meaningfully included in caregiving interactions, supported, informed, and coordinated by staff. Katrin Mehler, PhD, from Germany,

> **"The conference provided an exceptional balance between emotional insight and evidence-based knowledge. It reaffirmed that evidence alone is insufficient without human connection and empathy.**

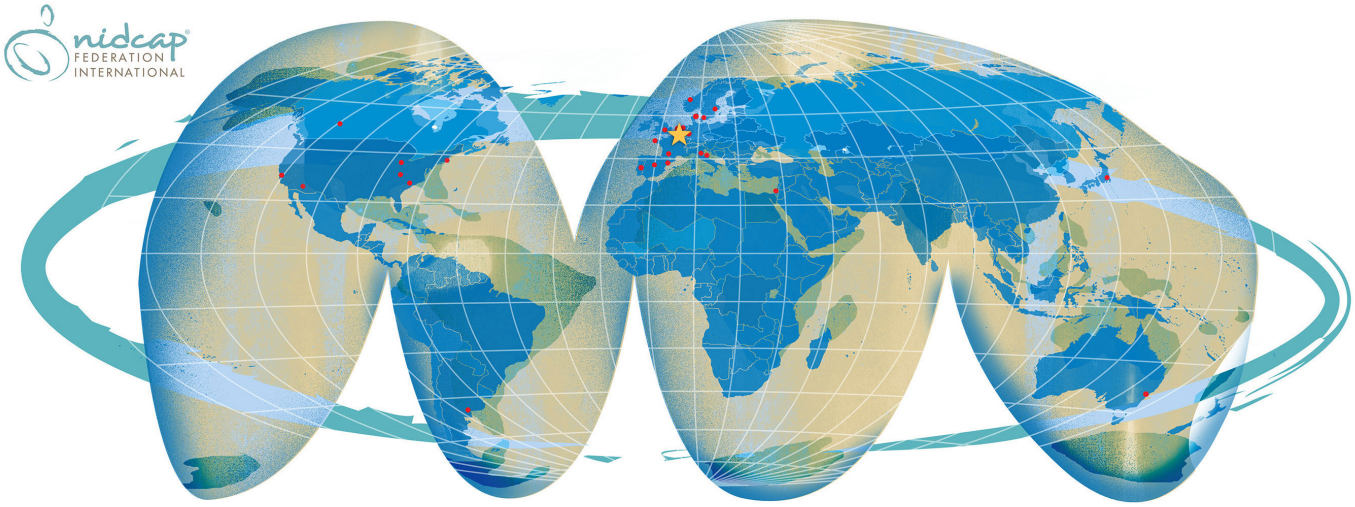
Meeting attendees

explained emerging research, including the IPOSTOSS study, which highlighted the impact of early skin-to-skin contact on physiological stability, neurodevelopment, mother-infant interaction, and parental mental health, reinforcing that nurturing a skin-to-skin environment influences outcomes for both infants and families.

The conference provided an exceptional balance between emotional insight and evidence-based knowledge. It reaffirmed that evidence alone is insufficient without human connection and empathy. The presentations effectively demonstrated that nurturing environments, supported by attuned professionals, promote not only neurodevelopmental progress but also family resilience. I also recognise, however, the challenges in applying these principles consistently within busy clinical settings. Systemic barriers such as staff shortages, environmental constraints, and procedural priorities can hinder opportunities for parent engagement and individualised care. The conference reinforced that sustainable change requires both individual reflection and institutional commitment. As professionals, our ability to nurture others is directly influenced by how nurtured we feel within our teams and systems. This aligns with the broader NIDCAP concept of "care for the caregiver," which recognises the interdependence between professional well-being and the quality of developmental care delivered.

It is a privilege to travel to conferences and connect with other neonatal clinicians from around the world, sharing experiences and discussing how NIDCAP principles are implemented and integrated into their clinical settings. These exchanges not only broaden perspective, but also inspire new ways of thinking. The conference gave me the opportunity to review the practices where I work and identify areas for improvement, for example, by strengthening advocacy for early skin-to-skin in extreme prematurity, prioritising caregiver wellbeing, and enhancing parent inclusion.

Attending the NIDCAP Trainers Meeting and the Ultra-Early Intervention Conference deepened my appreciation for the integration of science, empathy, and artistry in newborn care. The parent story served as a poignant reminder that families are not passive recipients of care, but essential partners and experts in their own journey. To truly uphold NIDCAP principles, we must not only observe and respond to infants' cues, but also attune to the emotional and psychological cues of parents and colleagues. Evidence-based practice gains its fullest meaning when applied with compassion and authenticity.



Ghent NIDCAP Training Center

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The NICU where our Ghent NIDCAP Training Center is located has 44 beds, of which nine are individual family-centred rooms. Three of these rooms are suitable for twins. The department employs 88 FTE (full-time equivalent) nurses, nine doctors, three secretarial staff, one psychologist and eight logistics staff. There are nine clinical nurse specialists.

Our Journey

Our history as a NIDCAP Training Center began in 2005 and continued through 2012. During this time, many projects from our developmental care workgroup were introduced. These included: implementing positioning materials to optimize positioning, handling, and kangaroo care; reducing light and noise on the ward; skincare; comfort and pain relief during venipuncture and catheter placement; and reducing pain through a sucrose protocol for painful interventions.

In 2013, we hosted a workshop, facilitated by Mary Coughlin, for the whole team on neurodevelopment and comfort care. This was followed over the next two years by a general awareness project on developmental care and a project on reducing noise in the NICU. Additional work included training of our first lactation consultant in the department.

In 2015, an Early Feeding Scale was implemented. At this time, the entire healthcare team attended the FINE 1 course. Sixteen staff attended FINE 2 training. In addition, three nurses and one physician began training to become NIDCAP Professionals under the supervision of Nikk Conneman and Monique Oude-Reimer from the Sophia NIDCAP & APIB Training Center in Rotterdam, Netherlands and were certified in 2016. Over the next two years, Nikk Conneman trained three additional nurses as NIDCAP Professionals.

Dr. Joy Browne with our three NIDCAP Trainers in Training and the NIDCAP Professionals in training, 2023

In 2018, after consultation with, and under the supervision of the Sophia NIDCAP & APIB Training Center, we started to organize our own FINE 1 training for local staff and for staff of the hospitals with which we collaborate.. The Early Feeding Skills program was also a part of this training.

We started the preparation to become an NIDCAP Training Center under the supervision of Joy Browne in 2019. However, due to the COVID-19 pandemic, we were delayed. In November 2022, two nurses were APIB certified, and in

NIDCAP masterclass in Rotterdam, 2024

Celebrating Certification at the NIDCAP Trainers Meeting in Copenhagen, Denmark, 2025

May 2023, one physician was certified. In 2023, the NIDCAP Trainers in Training began training 10 staff members (two doctors, four nurses, one executive nurse, one midwife, one psychologist, and one physiotherapist). By 2025, we achieved our goal and were certified as a NIDCAP Training Center.

Our Future Plans

- Further implementation of NIDCAP principles through optimization in daily care.
- Advisory role of the parent council in the daily operation of the department.
- Preparation of couplet care in a new infrastructure in collaboration with maternity and maternal intensive care.
- Strive for further maximum quality of care in which EFCNI (European Foundation for the Care of Newborn Infants) standards are used in the various care processes linked to the hospital's quality model.
- Share our experiences with our referring centers and take a leading role in this to ensure that patients, wherever they are cared for, receive optimal care based on the Family Centered Developmental Care (FCDC) principles.
- Accreditation as a NIDCAP Training Center, through which we maintain high-quality, bidirectional cooperation with our fellow Flemish NIDCAP Training Centers. We also want to continue the excellent cooperation with the Sophia NIDCAP & APIB Training Center in Rotterdam.
- As a NIDCAP Training Center, we want to have an international role in training and research, in accordance with the mission of our hospital.
- Achieve designation of NIDCAP Nursery Certification for our nursery.
- Continue to involve senior management of the hospital in FCDC process in the NICU.

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