forward to continuing to improve the future of infants and parents who experience intensive care.

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Conflict of Interest:
All authors are members of the Board of Directors of NIDCAP Federation International. The federation was incorporated in 2001 as not-for-profit membership organization that educates and supports NIDCAP professionals in NICUs around the world and has certified 21 NIDCAP Training Centers in 10 countries (with more certifications under way).

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NIDCAP and Developmental Care: A European Perspective

The systematic review by Ohlsson and Jacobs on the NIDCAP approach concluded that there is no evidence that NIDCAP improves long-term neurodevelopmental or short-term medical outcome.1 Despite their conclusion, “Because NIDCAP was not effective in reducing adverse outcomes, performing cost-effectiveness analyses became redundant,” they report that NIDCAP is associated with a better daily weight gain, a shorter hospitalization, and an increase in Bayley Scale of Infant Development scores at 9 months.

Developmental care and environmental strategies emerged in response to the background of the potential harmful effects of traditional NICU settings. When neonatal intensive care started in the 1960s, the priority was survival, as in adult intensive care. It took some time before the effects on the vulnerable growing preterm brain from the stressful environment and mother–infant separation were recognized. Many NICUs still consider technical aspects of care as a priority and parents as visitors. In Europe most elements of Early Developmental Care (EDC) are routinely applied in Scandinavian countries, but an increasing number of nurseries around Europe are changing their practices. NIDCAP is difficult to study because it embraces a range of interventions and behavioral changes, and the level of intervention is not standardized. Conventional randomized trial methods are difficult to use with such global intervention strategies, and it is therefore difficult to assess them. There is little need for randomized controlled trials to evaluate the importance of pain and stress management, sleep protection, avoidance of bright light and noise, hemodynamic changes related to handling, proper positioning, skin-to-skin contact, breastfeeding, parental presence, and a supportive patient–caregiver relationship. All these aspects have been studied.2 Furthermore, these are markers of respect for the infant.

There is sufficient scientific evidence of the value of an adequate physical environment, reducing overwhelming sensory stimulation, and increasing sensitive parent caregiving, on the brain development of preterm infants. NIDCAP addresses all these issues and is probably the best-defined and most evaluated method for optimizing care, allowing caregivers to tune in to the infant’s behavioral responses, with parents as the primary caregivers.

Rather than discouraging the promotion of NIDCAP and thus EDC, we should focus on the large body of evidence from the neuroscience literature that clearly confirms the deleterious effects of NICU stress and highlights the effects of EDC and parental intervention.4,5 There is a need to engage in high-quality research using techniques learned from the environmental enrichment literature. We academic neonatologists need to offer validated and affordable teaching programs to implement EDC. We have therefore created a European association for developmental care. The parent-initiated European Foundation for the Care of Newborn Infants strongly supports a general implementation of NIDCAP and developmental care. The findings of the article by Ohlsson and Jacobs could dissuade caregivers from devoting all their energies, making this initiative an important step to more neurodevelopmentally driven NICUs and high-quality support for parent–infant interaction.


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Re: Ohlsson and Jacobs, NIDCAP: A Systematic Review and Meta-analyses

This is the fourth NIDCAP meta-analysis by Ohlsson and Jacobs. As in the previous analyses, the authors’ abstract and conclusions are not supported by the authors’ reported findings.

These are the issues of concern:

1. The authors confuse key methods; NIDCAP¹ and Assessment of Preterm Infants’ Behavior (APIB)²,³ are 2 different instruments. NIDCAP entails naturalistic observations of infants at rest and during caregiver interaction; the APIB is an interactive formal neurobehavioral newborn assessment. The Prechtl Neurologic Assessment of the Fullterm Newborn Infant⁴ and Prechtl’s General Movement Assessment⁵ are also 2 very different assessments. The authors confuse these methods throughout.

2. The authors again combine studies reporting on outcome measures logically inconsistent for the samples considered. For example, NIDCAP intervention for low-risk infants (eg, preterm infants 28–33 weeks’ gestational age, never ventilated), cannot yield shorter durations of intubation and less CLD and intraventricular hemorrhage because the sample was chosen to exclude infants with these problems. Only NIDCAP studies involving high-risk ventilated infants can address these issues. Disregard of this logic yields meaningless results and amounts to mixing apples and oranges.

3. Ohlsson and Jacobs describe NIDCAP’s goal as reduction of mortality and severe disabilities, such as cerebral palsy, blindness, and deafness. This goal has never been proposed by any NIDCAP investigator. NIDCAP was developed to improve the quality of neurodevelopmental functioning of viable infants cared for in newborn intensive and special care nurseries.

And, indeed, Ohlsson and Jacobs document the benefits that NIDCAP trials have reported. All are clinically relevant and developmentally meaningful. The authors list the following as significant benefits:

a. Health and hospital benefits (Table 3): significantly shorter hospitalization and significantly younger (earlier menstrual age) at discharge

b. Growth benefits (Table 4): significantly improved daily weight gain

c. Significantly improved Bayley Mental Developmental Index scores at 9 months’ corrected age (CA) (Table 2 and Fig 3)

d. Significantly improved Bayley Psychomotor Developmental Index scores at 9 months’ CA (Table 2, Fig 3)

e. Significantly improved APIB and Prechtl scores at 2 weeks’ CA

f. Significantly improved electroencephalographic and MRI findings (which the authors choose not to include “as they are surrogate biomarkers for long-term neurodevelopment”)

Despite these numerous significant benefits, Ohlsson and Jacobs conclude, “Because we were not able to identify

Conflicts of Interest:
None declared

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