

# Neonatal developmental care practice: Current nursing implementation

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## Abstract

The intervention standard of Synactive Development Theory, followed by the Neonatal Integrative Developmental Care Model, has long been recommended as a strategy to lessen the impact of hospitalization on newborns in the NICU. However, it has yet to be widely applied, particularly in developing countries. At least three elements contribute to these developmental care (DC) practices: professional efficacy, nurses' perceptions of developmental care, and a task-oriented organizational culture. Therefore, to improve the DC implementation, it is critical not only to focus on increasing the capacity of personal staff but also to ensure that organizational culture supports DC implementation, with the care unit's managerial staff playing an important role.

**Keywords:** developmental care; neonatal; nursing practice

A Neonates, a period of transition from intra to extra uterine, is a vulnerable population due to their unique physiological characteristics, developmental needs, and dependency on caregivers for survival. Providing appropriate medical care, nutrition, and environmental support is essential for ensuring the health and wellbeing of neonates during this critical period. Problems in the neonatal period can be linked to those characteristics. Prematurity and low birth weight are two conditions that can lead to neonatal death.

A study shows that developing countries continue to have high rates of prematurity and low birth weight (LBW), especially in countries in East Asia, West Asia, Latin America, North America, and Northern Europe (Idueta et al., 2023). Both LBW and prematurity require intensive care in hospitals. The good news is that newborn deaths are decreasing, which can be attributed to interventions and health technology advancements. The survival rate of neonates treated in the NICU neonatal intensive care unit (NICU) has improved. However, the quality of life of these survivors remains a challenge because they experience various issues due to prolonged treatment and an unsupportive environment for neonatal development. More than half of preterm infants show disabilities, including attention deficit, behavior problems, emotional issues, and school failure.

Synactive Development Theory, initially developed by Als, serves as a framework for observing the detailed behavior of babies in the NICU. Detailed behavioral observation of the infant in the NICU becomes the professional's guide to continuously provide individually adapted, developmentally supportive care (Als, 2009). This approach aims to minimize the long-term impacts of the NICU hospitalization. Then Altmier and Phillips (2016) developed The Neonatal Integrative Developmental Care Model, which provides seven basic parameters for neuroprotective family-centered developmental care of preterm newborns and is a framework for clinical practice in numerous NICUs worldwide. The seven neuroprotective basic parameters are depicted as overlapping lotus petals as 1) healing environment, 2) partnering with families, 3) positioning and handling, 4) safeguarding sleep, 5) eliminating stress and pain, 6) protecting skin, and 7) optimizing or maximizing nutrition (see Fig. 1). Currently, Neonatal Integrative Developmental Care is the core standard of care so that neonates do not

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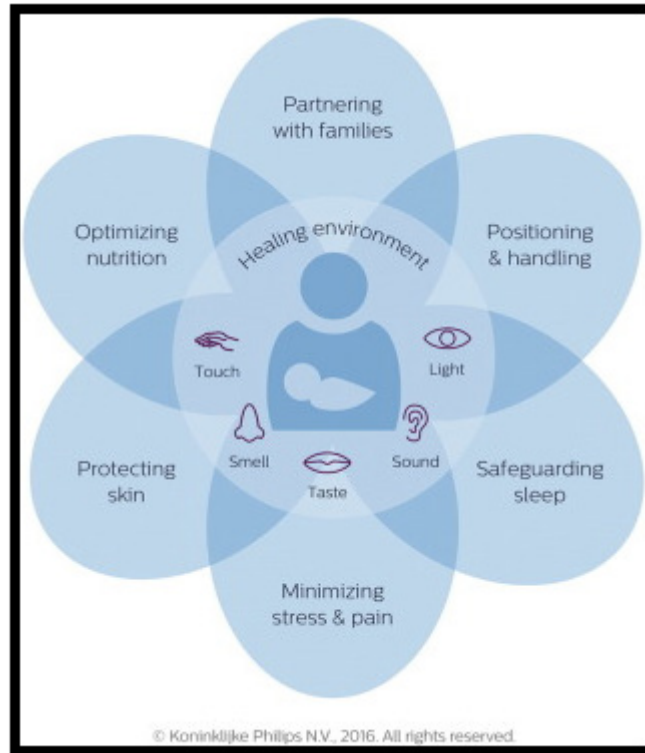
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**Figure 1. The Neonatal Integrative Developmental Care Model (Altimier & Phillips, 2016)**

have problems after a long period of care.

Developmental care refers to nursing care typically provided by NICU nurses to maintain babies' physiological stability and enhance their neurological development (Mosqueda et al., 2013; Burke, 2018). Since its introduction in 2009, the implementation of developmental care (DC) has varied significantly in quantity and quality. Some DC applications fully encompass all elements, whereas others only partially do. Single interventions, such as massage or Kangaroo Care only, are termed DC; however, DC programs incorporating multiple interventions are more frequently employed to include all variables impacting the outcomes (Burke, 2018). Furthermore, the facilities and resource availability vary between locations. In low-resource settings, the DC implementation rates are lower than in developed countries (Heys et al., 2023). Nurses in developed countries with comprehensive healthcare facilities and continuing education are more likely to have positive attitudes and perspectives toward DC implementation. This implementation is often based on their attitudes and perceptions, which are reinforced by institutional policy. In contrast, developing countries encounter numerous obstacles while attempting to implement DC.

The obstacles and challenges faced in implementing DC in developing countries include limited nursing capacity, including awareness, knowledge, and attitudes (Hong & Son, 2020; Kassab & Hamadneh, 2021). Park and Kim (2019) identified three major elements influencing the implementation of DC in hospitals: professional

efficacy, nurses' perceptions of DC, and task-oriented organizational culture. High professional efficacy and a strong sense of optimism regarding their abilities and motivation to work may positively impact the nurses' professional performance. Nurses' perception of the significance of DC could lead to better implementation of DC. Despite being aware of its importance, many NICU nurses did not engage in DC practices (Kim & Shin, 2014). Finally, organizational culture, defined as the norms and expectations of members' behavior and roles within an organization, plays a crucial role. Interestingly, a task-oriented organizational culture was associated with DC practice among NICU nurses (Park & Kim, 2019). Developing an organizational culture that supports nurses' well-being, tackles workplace issues, and improves healthcare delivery requires competent nursing management and effective hospital administration. (Aydogdu, 2024). These factors highlight that the implementation of DC in hospitals is influenced by both individual and organizational elements, especially the work culture in the ward.

Strategies targeting both individual nurses and managerial aspects are required to enhance the nurses' DC implementation. Service managers play a crucial role in improving DC services by fostering a positive culture that supports staff in incorporating DC principles into daily nursing practices. Strategy development should be tailored to address the specific conditions of each hospital or region. Hence, implementation research is necessary to bolster individual capacity and

cultivate a conducive work culture in the NICU room, particularly concerning neonatal care in general.

DC implementation remains a challenge, especially in developing countries. Therefore, it requires all elements in education and research to seek appropriate strategies in implementing all DC principles, even under various conditions where resources and facilities are limited. Strengthening resources involves individual nurses personally and the management system's capabilities and managerial capacity of healthcare services.

### Declaration of Interest

None to declare

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### Data Availability

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

### References

- Als, H. (2009) 'Newborn individualized developmental care and assessment program (NIDCAP): New frontier for neonatal and perinatal medicine'. *Journal of Neonatal-Perinatal Medicine*, 2(3), 135–147. <https://doi.org/10.3233/NPM-2009-0061>
- Altimier, L. and Phillips, R. (2016) 'The neonatal integrative developmental care model: Advanced clinical applications of the seven core measures for neuroprotective family-centered developmental care'. *Newborn and Infant Nursing Reviews*, 16(4). <https://doi.org/10.1053/j.nainr.2016.09.030>
- Aydogdu, F. A. L. (2024) 'The impact of organizational culture on nursing work effectiveness: A comprehensive analysis the impact of organizational culture on nursing : A comprehensive analysis'. (January).
- Burke, S. (2018) 'Systematic review of developmental care interventions in the neonatal intensive care unit since 2006'. *Journal of Child Health Care*, 22(2), 269–286. <https://doi.org/10.1177/1367493517753085>
- Heys, M. et al. (2023) 'Development and implementation experience of a learning healthcare system for facility based newborn care in low resource settings: The neotree'. *Learning Health Systems*, 7(1), 1–12. <https://doi.org/10.1002/lrh2.10310>
- Hong, H. and Son, H. M. (2020) 'Factors influencing developmental care performance among neonatal intensive care units nurses'. *Child Health Nursing Research*, 26(2), 131–139. <https://doi.org/10.4094/CHNR.2020.26.2.131>
- Idueta, L. . et al. (2023) 'Vulnerable newborn types Analysis of population-based registries for 165 million births in 23 countries, 2000-2021', 1–15.
- Kassab, M. and Hamadneh, S. (2021) 'Developmental care practices at neonatal intensive care units in developing countries', in Laher, I. (ed.) *Handbook of Healthcare in the Arab World*. Switzerland: Springer Nature, 2574–1588. <https://doi.org/10.1007/978-3-030-36811-1>
- Kim, J. and Shin, H. (2014) 'Concept analysis of developmental care for preterm infants: Hybrid model'. *Child Health Nursing Research*, 20(4), 350–358. <https://doi.org/10.4094/chnr.2014.20.4.350>
- Mosqueda, R. et al. (2013) 'Staff perceptions on Newborn Individualized Developmental Care and Assessment Program (NIDCAP) during its implementation in two Spanish neonatal units'. *Early Human Development*, 89(1), 27–33. <https://doi.org/10.1016/j.earlhumdev.2012.07.013>
- Park, J. and Kim, J. S. (2019). 'Factors influencing developmental care practice among neonatal intensive care unit nurses'. *Journal of Pediatric Nursing*, 47, e10–e15. <https://doi.org/10.1016/j.pedn.2019.03.014>