

Integration of Kangaroo Care Into Routine Caregiving in the NICU

What Is Stopping You?

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Kangaroo care (skin-to-skin holding) began in the early 1970s in Bogotá, Columbia, out of necessity. Low-birth-weight (LBW) infants were not surviving because of a shortage of incubators and mothers were encouraged to hold their infants skin-to-skin as an alternative way to maintain the infant's temperature.¹ After years of research related to kangaroo care, it has been found that its benefits outweigh the risks and include so much more than just thermoregulation.²⁻⁴

A search of CINAHL, MEDLINE, and the Cochrane Database was conducted to find current research, practice guidelines, and the most recently published integrated reviews related to the implementation of kangaroo care with LBW preterm infants in the neonatal intensive care unit (NICU) setting. Several advantages were identified and supported by the evidence. However, there are disadvantages that have slowed the incorporation of this intervention into routine caregiving.

A review of the advantages is provided, followed by an appraisal of the disadvantages and strategies that might be used to overcome these barriers, given the overwhelming evidence to support integration of kangaroo care into routine caregiving in the NICU.

ADVANTAGES

Thermoregulation^{2,4,6}

When held skin-to-skin during kangaroo care, the mother's body temperature helps to regulate the infant's temperature. Kangaroo care has been shown to

decrease hypothermia in LBW infants. It is important to monitor the infant's temperature before, during, and after kangaroo care to ensure that the infant remains stable. The infant should be undressed and only have a diaper on before being placed on the mother's or father's bare chest. A warm blanket can be used to cover the baby, a hat can be used, or a heat source can be placed over the mother to ensure that the very low-birth-weight (VLBW) infant does not experience hypothermia.

Physiologic Stability²

The heart rate, respiratory rate, and oxygen levels remain more stable in infants during kangaroo care. There is also a decrease in apneic episodes. Nurses can support parents to see the importance of their role in helping the infant maintain physiologic stability through nonpharmacologic interventions. To do this, nurses and parents must have a basic understanding of infants' behaviors and cues.

Breastfeeding^{2,4,5}

Infants who routinely have the opportunity to kangaroo care with their mothers have increased success with breastfeeding and are more likely to be exclusively breastfed. Mothers of infants who are not yet able to take oral feedings are often able to express larger quantities of breast milk for gavage feedings after kangaroo care, and when kangaroo care is provided routinely, they are better able to produce a continuous supply of expressed breast milk.

Growth^{2,4,5}

Kangaroo care results in improved weight gain. Studies have also shown that infants who have routine skin-to-skin care continue grow better in length and head circumference as well. These 2 categories of growth relate to the infant's overall nutrition and health.

Infection^{2,4,7}

In some studies, the incidence of nosocomial infections is lower in infants who participate in kangaroo

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care. It is thought that the mother's skin transfers antibodies to protect the infant from skin microbes. Another theory is that the mother helps to prevent water loss from the infant's skin, which in turn helps to maintain skin integrity. Other studies show no difference in the incidence of nosocomial infections in infants who participate in kangaroo care and those who do not. Further research in this area is necessary.

Mother-Infant Bonding^{1,2,4}

The NICU is a high-stress environment that often intimidates parents. Providing kangaroo care offers mothers and fathers the opportunity to take an active role in the care of their compromised infant, which facilitates bonding and attachment.

Pain Management^{2,8,9}

Infants who experience painful stimuli during kangaroo care are better able to regulate their reaction to pain and show a decreased cry response. Chemicals released by the infant during kangaroo care act to raise the pain threshold. Also, because the infant is able to achieve the deep sleep state, they are more difficult to arouse and have a dampened pain response during kangaroo care.

Behavioral State^{1,2}

Infants are able to attain the quiet alert state and the deep sleep state during kangaroo care. By being placed in a tucked position on the mother's or father's chest, infants are better able to manage the NICU environment. They often relax and are less likely to react to negative stimuli in the same way they would if they were not participating in kangaroo care. Studies have shown that both the infant's and mother's bodies release chemicals that promote relaxation and sleep during kangaroo care. Others show a decrease in the stress hormone and cortisol as well.

DISADVANTAGES

Infant Instability^{1,10}

While all infants may not initially qualify for kangaroo care, it is important to continually reevaluate the cost-benefit ratio. In fact, some vulnerable infants become more stable during kangaroo care. Parents may not understand why they are not able to provide kangaroo care to their infant, and the medical team needs to ensure that the parents still have an active role in caregiving even if an infant becomes unstable or has a stressful period.

Inadequate or Unavailable Protocols^{1-3,11}

Nurses need guidelines for kangaroo care. NICUs need to work together to develop a protocol for kangaroo care that includes specificity related to timing, staffing, and equipment that facilitate implementa-

tion with LBW, VLBW, and vented infants in the NICU. For example, having the right kinds of chairs to support mothers providing kangaroo care for long periods of time, as well as staffing to support mothers and infants during the intervention, is essential. The protocol should include guidelines for evaluation prior to kangaroo care, evaluation of the transfer from the bed to the mother (ideally a standing transfer), evaluation of the initial time during which the infant recovers from the transfer (approximately 15 minutes), and evaluation throughout kangaroo care to ensure that the infant remains physiologically stable, and the infant and mother are comfortable. Kangaroo care is best implemented for the infant if the duration is longer rather than shorter; however, this may take a bit more resources. More planning will be needed to increase the comfort level of all with the mother's participation in the caregiving. If the chair is appropriately supportive, the mothers can safely hold the infant during kangaroo care even while dozing. The environment of the NICU must also be conducive to kangaroo care. This includes a quiet atmosphere, a low-lit environment, and minimal disruption of the mother-infant bonding time by planning care around the mother and the infant or doing assessments and some procedures while the infant is in kangaroo care.

Education^{1,2,11}

Education is fundamental to implementation of any standard of care. If kangaroo care is to become routine, nurses need education on the benefits of kangaroo care, how to provide kangaroo care in a way that best supports the infant and the mother, and how to evaluate and monitor the infant during kangaroo care. Incorporation of family into caregiving, including kangaroo care, also needs to be a priority in the nurse's annual evaluation. These types of unit standards tell the nurse that this is an expectation of a neonatal nurse not just something "nice" she or he is doing for the family.

Parents also need routine education on the benefits of providing kangaroo care for their infant. With this knowledge, parents will be better able to understand the importance of kangaroo care and will be more likely to take an active role in the care of their infant, changing the environment from technology-centered to family-centered.

RECOMMENDATIONS

On the basis of the research that supports its many benefits, parents should be encouraged to provide kangaroo care to their infant while in the NICU. Kangaroo care should be provided daily as long as the infant remains stable and the duration should be at least 1 hour to achieve the optimal deep sleep state. For more analysis and information related to the

evidence and implementation of kangaroo care, please take the time to refer to the chapter titled “Kangaroo Care Is Developmental Care” in the latest edition of the NANN publication: *Developmental Care of Newborns and Infants: Handbook for Health Professionals* (2nd ed).²

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