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Kangaroo Care

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Abstract

Kangaroo Care is described as skin on skin contact between parent and baby. The baby, wearing only a diaper, is placed directly on mom or dad's bare chest. This skin on skin contact has proven to be beneficial for baby as well as the parents. Some of the positive effects for the baby include stabilizing vital signs such as temperature, heart rate, and respirations. Kangaroo care has also shown to facilitate breastfeeding and bonding in mothers. The benefits for parents include improved bonding and attachment. Parents have also reported feeling more competent and confident when caring for their newborn after they are released from the hospital. Kangaroo care is not only for healthy newborns; preterm newborns in the NICU have benefited from this method also. While there are more risks when dealing with preterm babies, they have shown an incredible positive response to this contact. Nurses should be educated on Kangaroo Care and know how to facilitate the family when participating in this care.

Cover Page Footnote

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Skin on skin contact is a practice that has been around for many years. The earliest noted research dates back to 1978 where a neonatologist in Bogota, Colombia introduced an idea that would help relieve the shortage of caregivers and resources. He believed that skin on skin contact between mother and baby would give them the warmth they needed as well as access to breastfeeding when they were hungry. His idea yielded positive outcomes and sparked research for Kangaroo Care in preterm infants. (Kangaroo Care) One of the earliest research articles found dates back to 1989 when Andrew Whitelaw started to ask, "Is kangaroo care just a nice experience or an important advance for preterm infants?" This research article summarized the findings of studies that compared kangaroo care infants on topics such as lactation, psychological advantages, sepsis, oxygenation, and temperature. The first study in London compared thirty five infants that had skin to skin contact with thirty six who had normal contact with clothes on. They found that lactation was significantly longer in the kangaroo care group than the control, and at

six months of age, crying was significantly reduced in the kangaroo care group. Another study looked at the effects on oxygenation by monitoring the respirations and pulse oxygenation over eight hour periods. While the findings concluded that apnea and oxygenation were similar between the two groups, the tcPO₂ (transcutaneous oxygen tension) increased by about seven mmHg in the kangaroo care infants. The study that compared the temperature in infants with kangaroo care to infants in the incubators found that 50% of preterm infants who participated in kangaroo care were able to thermoregulate themselves without the incubator at five days old. They also found that low birth weight infants could maintain their own temperature on mom's chest if they wore a hat and were covered by a blanket. This article also found no significant increase in neonatal sepsis and actually showed a decrease in nosocomial infections. Parental interviews reported that the kangaroo care parents responded to their infants with more emotion and expressed more confidence in breastfeeding and basic care for the infant at home. The control parents showed hesitation with discharge, frequently abandoned breastfeeding, and still asked many questions regarding the infant's condition. (Whitelaw 1990) It's important to note that March of Dimes also states kangaroo care can benefit infants by aiding in temperature and heart rate regulation as well as improving weight gain (*Kangaroo care: The power of skin-to-skin holding* 2012).

A study conducted by Midwife Sarah Gregson revealed a positive correlation between the length of stay in the NICU and the amount of time spent participating in kangaroo care. This study concluded that the length of stay was reduced by one day in the kangaroo care infants compared to the control group. They also found that more infants were discharged breastfeeding with kangaroo care than the control group. Bonding proved to be one of the greatest benefits with parents rating it especially high during the first two weeks of life. (Gregson 2011) One of

the most positive outcomes was improved breastfeeding. One study by Renée Flacking, investigated the effects of kangaroo care on breastfeeding at one month and six months of age with preterm (32-36 weeks gestation) and very preterm (less than 32 weeks gestation) infants. While the preterm infant's results were too close to be conclusive, the study found that kangaroo care very preterm breastfed infants showed an increase at one, two, five, and six months compared to no kangaroo care infants (Flacking 2011). This study supports the fact that even the sickest and smallest infants will greatly benefit from daily skin on skin contact. Kangaroo care also helps mothers during the breastfeeding process. Skin to skin contact helps the mother's milk come in faster and it also helps her produce more. Kangaroo care allows the breast to be readily available to the infant which could be why these mothers produce more milk over time. (*Kangaroo care: The power of skin-to-skin holding* 2012).

Another study evaluated the effects of kangaroo care on pain from an intramuscular injection. Kashaninia et. al, utilized 100 infants to evaluate using the NIPS pain scale after an IM injection was given. The study group participated in kangaroo care ten minutes before the injection. The study revealed that responses and NIPS scores from the control group after the injection were significantly more severe than the study group. The duration of crying after the injection was also significantly longer in the control group. Surprisingly, 30 infants in the study group and six infants in the control group did not cry at all. As a nurse, it is important to keep these findings in mind when preparing to give an IM shot to infants. If possible, the nurse should encourage parents to hold their infant skin to skin before administering the vitamin K injection to reduce pain in the infant. (Kashaninia et. al 2008)

Another study conducted by Ferber and Makhoul, looked at the effect of kangaroo care on neurobehavioral responses in term newborns. This study was comprised of two groups, one

that had kangaroo care within the first hour of delivery and one that did not. Observations revealed that after four hours, the kangaroo care infants slept longer, remained mostly in a quiet sleep state, showed more flexed movements and posture, and less extended movements and postures. The discussion revealed that in kangaroo care the soothing maternal touch improved infants' CNS control by reducing stress. Findings regarding sleep remained consistent with other studies showing kangaroo care infants slept deeper and longer than those who did not have kangaroo care. All of these findings supported the claim that kangaroo care helps infants transition from the intrauterine environment to the extrauterine environment. (Ferber and Makhoul 2004)

As more studies emerge, we are learning that fathers can participate in kangaroo care and still benefit the infants. One study looked at the effects of kangaroo care on crying by using fathers after the mother had a Cesarean section. Using the Neonatal Behavioral Assessment Scale, researchers evaluated alertness, sucking reflex, rooting reflex, and time spent crying. Researchers found that the skin to skin care infants cried significantly less than the control group. For alertness, the skin to skin group took about 60 minutes to reach a drowsy state when the control group took over 110 minutes to reach the same level. The sucking reflex was shown to decrease in both groups as wakefulness decreased. The most significant finding from this study was that fathers can help the infant reach a calm, quiet, and relaxed state faster if they use kangaroo care. (Erlandsson et. all 2007) Another study by Velandia et. all, looked at the communication between mother, father, and infant shortly after birth. They discovered that kangaroo care actually helps open the line for communication between the mother and father. Couples were videotaped with their infant in five minute increments shortly after birth and it was

revealed that parents who utilized kangaroo care were talking more with each other, and responding more to the infant. (Velandia et. all 2010)

One study by Ludington-Hoe et. all, actually looked at temperature regulation regarding twins. Amazingly enough, researchers found that twins will generate a specific response from each breast, based on the thermoregulation needs of that infant. The temperatures dropped initially during the transfer but slowly climbed over a 90 minute period to more than half a degree higher. The opposite was true also, when infant temperatures reached 36.9°C or higher, breast temperatures began to decrease so the infant did not get too hot. This study suggests that infants can participate in kangaroo care even if they are not thermodynamically stable because the mother's breasts will increase or decrease to accompany the needs of the infant. It's also important to note that this is one of few articles looking at the effects of kangaroo care on twins and much more research is needed for the results to be one hundred percent conclusive.

(Ludington-Hoe 2006)

Kangaroo care has been shown to greatly impact infants both preterm and term, but it also impacts the parents. A research article by Amy Johnson looked at the maternal experience behind kangaroo care. For this study, mothers were allowed to hold their infant in the NICU for one hour, three times in the first two weeks of the infant's life. By the third time, mothers were observed humming, singing, touching, stroking, and kissing their babies more than before. They also verbally reported feelings of "being needed" and also reported feeling more confident about their infant's care. Increased reports of satisfaction also depended on the nurse caring for the family. Mother's reported increased satisfaction when the nurse took time to teach them how to care for the infant. Many mothers reported feeling scared and nervous during the first holding but at the end said it helped them "understand their babies needs better". In the end, this study

concluded that kangaroo care mothers reported feeling more confident and competent when providing care for their child, as well as feeling closer and more connected to the baby. (Johnson 2007)

The last article found looks at how nurses can support families during kangaroo care. It's important for us as nurses to understand our role and know the best way to facilitate parents during this process. Research has shown us that mothers usually have feelings of separation, exclusion, and powerlessness when their infants are in the NICU. Mothers that participated in kangaroo care reported having a different experience by reporting feelings of warmth, calmness, and closeness with their baby. Another study showed that nurses were aware of the benefits regarding kangaroo care and they strongly agreed with the feelings of closeness it can provide for the mother. Despite these findings, many also expressed fears like minimal space in the NICU, dislodging equipment, and not enough staff to supervise, prepare the infant, or educate the family. With that said, the relationship between the nurse and mother is very important. Mothers could sense when the nurse was not supportive or encouraging and this greatly affected the mother's attitude towards kangaroo care. Therefore, it is vital for the nurse to educate the parents as much as possible and encourage them to provide care whenever able. This will help increase feelings of confidence and importance in the parents. The nurse should be well educated on kangaroo care and should highlight these benefits for the parents. This study supports the fact that nurses should always use a caring, non-judgmental approach when dealing with patients and families. Nurses should never overlook the need for providing psychosocial support and encouragement to parents. (Kearvell 2008)

In conclusion, kangaroo care provides many different benefits for infants and parents. It helps infants transition from intrauterine to extrauterine life, thermoregulation, stabilizes heart

and respiratory rate, promotes oxygenation with less apnic spells, reduces pain, improves motor system balance, promotes effective breastfeeding, creates a calming effect to reduce stress, enhances bonding, promotes restful sleep and sleep organization , encourages normal growth, decreases nosocomial infections, and decreases the length of stay in the NICU. Parents report increased feelings of confidence, competence, and feeling needed. Kangaroo care also aids in breastfeeding by helping the mother get milk in faster and helping baby improve the suck and rooting reflexes. Kangaroo care can be done with fathers as well as even adopted parents to improve bonding and attachment. The benefits of kangaroo care far outweigh the risks of displacing lines or equipment. With enough staff helping with the transfer, accidents can be easily avoided. Nurses play a vital role in facilitating the parents with kangaroo care and providing the education needed for them to provide as much care as possible. While more research is being conducted, the benefits of kangaroo care are extremely positive and more should be done to ensure this is presented in hospitals every day. Kangaroo care satisfies an infant's need for touch and provides the nurturing environment in which they can thrive. As a nurse, I will do my best to provide education to my patients and facilitate them in every way I can.

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