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Co-Bedding Preterm Infants in the NICU

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Purpose
To determine if co-bedding preterm twins in the neonatal intensive care unit (NICU) will promote better self-regulation, quality of sleep, response to pain, weight gain, and safety when compared to the standard practice of placement in separate beds.

PICOT Statement
- Population: Stable preterm twins in the NICU
- Intervention: Co-bedding twins in incubators/cotts
- Comparison: Placing infants separately in incubators or cotts
- Outcome: The co-bedding twins will have improved infant outcomes
- Timeline: Length of NICU stay

Interventions
- In standard practice, twins are placed in separate incubators or cotts and they are monitored based on individual needs
- The twins are monitored for pain, their ability to self-regulate, quality of sleep, weight gain, and temperature regulation along with other factors specific to each infant
- For the intervention, each twin is placed in the same incubator or cot together either skin-to-skin or swaddled
- Every twin is placed on cardiac monitoring, continuous pulse oximeter, and observed to determine activity
- They are also monitored separately based on individual need, but with the support from the other twin

Summary
- Co-bedding promotes self-regulation, quiet sleep, weight gain, decreases crying, and decreases pain in twin preterm infants
- Co-bedding is a comforting measure for infants that can be implemented without significant adverse effects and is a noninvasive solution to improving overall physiologic stability

Background
- Co-bedding is defined as caring for two of more infants in the same incubator/cot and is considered a developmental initiative to minimize adverse effects of preterm birth (Hayward et al., 2015).
- Sharing an environment in utero shows that twins exhibit the same sleep/wake cycles, circadian rhythms and coincide with each others movements.
- Enhancing close contact, like that of intrauterine life, in extrauterine life could enhance their success in adapting after birth.
- Coregulation is how newborn twins support each other in the transition to postnatal life and coregulation is mediated by physical contact.
- Maternal skin-to-skin contact has been shown to decrease pain responses of infants during procedures solely from the stabilization and regulation from direct skin contact (Campbell et al., 2009).
- Skin-to-skin contact has also shown improvements with regulation of temperature, which is crucial to infant stability.
- Essentially the intent of these studies is to evaluate the comfort level of twins in co-bedded environments versus those in separated environments.

Future of Co-bedding in the NICU Setting
- There is evidence to support the positive effect that co-bedding has on these premature twins. Further studies are recommended for ongoing verification of outcomes, but coregulation should be implemented in the NICU based on the positive results.

Outcomes as Noted in Literature
- Twins that were co-bedded showed more time spent in the same state, behaviorally, than twins that were separated.
  - 50% in co-bedded versus 39% standard care
- The co-bedded twins also spent more time in quiet sleep and slept less time crying.
  - 25% in co-bedded verses 16% standard care
- Based on the premature infant pain profile (PIPP), co-bedding of the twins reduced their pain sensation.
  - Decreased from 9.5 in standard care to 7.9 in co-bedded
- The overall average weight was calculated to be higher in the infants that we co-bedded.
  - Co-bedded had an average weight gain of 70 grams more than standard care
- There was no significant difference noted between co-bedded twins and standard practice with safety of the infants based on temperature, heart rate, oxygen saturation, and signs of sepsis.

References