THE ASSOCIATION OF KANGAROO MOTHER CARE, ENERGY CONSERVATION, AND BONDING IN PRETERM NEONATES

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BACKGROUND

- Prematurity is the leading cause of death in children under age 5 because premature neonates cannot adequately meet their energy needs.
- The World Health Organization advocates Kangaroo Mother Care (KMC) to reduce neonatal risks.
- KMC is an essential intervention for neonatal growth, maturation, and healing.

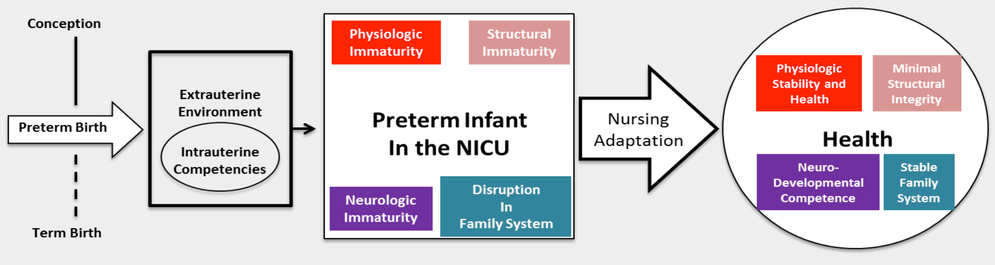
PURPOSE

1. Determine if KMC ↓ neonatal stress and ↓ energy utilization by decreasing ATP expenditure.
2. Investigate the bonding effects of KMC using the Mother-to-Infant Bonding Scale.

RESEARCH QUESTIONS

1. Does KMC intervention reduce energy demands in the preterm neonate as evidenced by decreased biochemical markers of ATP degradation?
2. Is there a relationship between KMC and reduced oxidative stress?
3. Is there a relationship between KMC and maternal–infant bonding?

CONCEPTUAL MODEL



Theory of Health Promotion for Preterm Infants, Mefford 2004

HYPOTHESES

If KMC decreases neonatal stress and energy utilization, then:

- There will be a significant decrease in the urinary ATP utilization markers of preterm neonates after KMC.
- There will be a significant decrease in oxidative stress in preterm neonates after KMC.
- There will be a significant increase in the parent–infant bonding score after KMC.

METHODS

- The effect of 1 hr of KMC will be measured in an age-stratified, randomized control trial of 50 mother–infant dyads between 26-34 weeks gestational age.
- Neonatal urinary samples collected before, 3 hr after, and 6 hr after KMC will be tested for purine degradation products (i.e., hypoxanthine, xanthine, and uric acid) to measure ATP expenditure and allantoin to measure oxidative stress.
- Bonding will be quantified using the Mother-to-infant Bonding Scale, a reliable 8-item self-assessment with a demonstrated two-factor model, good predictive validity, and acceptable internal consistency (a = 0.71).

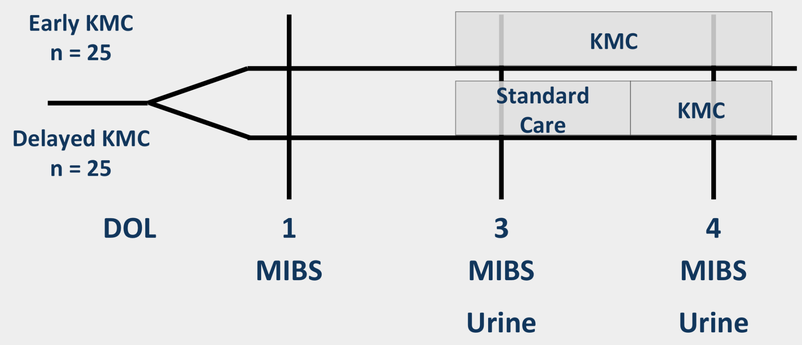
STATISTICAL ANALYSIS

- A repeated-measure analysis of variance (R-ANOVA), with the factors of time and treatment, will be used to assess significant differences between the treatment and control groups.

IMPLICATIONS

- This study will provide physiological evidence of the benefits of energy conservation via KMC to the recovery adaptations of preterm neonates.

STUDY DESIGN



RESULTS

Data collection is in progress; results are forthcoming.

ACKNOWLEDGEMENTS

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