

A Quasi-Experimental Study to Assess Effectiveness of Kangaroo Mother Care on the Health Parameters of LBW Babies and Maternal Infant Bond and Maternal Stress Among Mothers at NICU, NMCH

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Abstract: Background:

Low birth weight (LBW) babies are among the most vulnerable new-borns, facing high risks of hypothermia, sepsis, feeding difficulties, and delayed growth. In low-resource countries like India, where incubator access is limited, Kangaroo Mother Care (KMC) provides a simple, cost-effective alternative. It promotes thermoregulation, breastfeeding, emotional bonding, and maternal confidence while reducing neonatal morbidity and mortality. Recognizing its importance, this study aimed to assess the effectiveness of KMC on the health parameters of LBW babies and its impact on maternal–infant bonding and maternal stress among mothers admitted to the NICU at NMCH, Jamuhar.

Methods:

A quasi-experimental one-group pre-test and post-test design was adopted. Sixty postnatal mothers with LBW babies were selected using purposive sampling. A structured questionnaire and observation checklist were used to assess maternal knowledge and practice. After the pre-test, mothers received a 45-minute structured teaching programme including demonstrations and visual aids. Post-test data were collected three days later. Statistical analysis used descriptive statistics for frequency, mean, and percentage, and inferential statistics (t-test and chi-square) to test the hypotheses and associations.

Results:

Before the intervention, 80% of mothers had average knowledge and 20% had poor knowledge regarding Kangaroo Mother Care (KMC). After the educational programme, 95% of mothers achieved good knowledge, and only 5% remained average. The mean pre-test knowledge score was 21.38 (SD = 3.39), while the post-test mean rose to 29.46 (SD = 2.00), showing a statistically significant improvement ($t = 22.75$, $p < 0.001$). Educational qualification and occupation were significantly associated with post-test scores, whereas age and family type were not. In addition to knowledge improvement, observational findings indicated notable behavioral and clinical changes among both mothers and infants. There was a marked improvement in maternal handling confidence, increased frequency and duration of skin-to-skin contact, enhanced breastfeeding initiation, and better feeding responses in infants. Post-intervention observations also showed visible emotional bonding between mother and baby, with mothers reporting reduced anxiety and greater satisfaction in new-born care. Babies receiving KMC demonstrated stable body temperature, consistent weight gain, deeper sleep patterns, and calmer behavior compared to pre-



intervention observations.

Conclusion:

The study concluded that KMC is an effective and feasible method to improve neonatal outcomes and strengthen maternal–infant relationships. Structured education substantially increased maternal knowledge, confidence, and adherence to KMC practices. It contributed to better infant thermoregulation, weight gain, and reduced maternal anxiety and stress. KMC should be promoted as a standard practice for all mothers of LBW babies, especially in resource-limited neonatal units. The findings highlight the nurse’s pivotal role in initiating, teaching, and supporting mothers to maintain KMC both in hospital and at home.

Implications:

The study underscores the need for regular, comprehensive food safety education reinforced by policy mandates. Institutional kitchens should implement supervision, periodic evaluations, and infrastructural support to maintain compliance. Adapting teaching methods to the language and literacy of workers and using visual, participatory materials enhances reach and efficacy. These interventions have broad potential to reduce foodborne disease risks and improve public health outcomes across diverse institutional settings..

Keywords: Maternal Health, Child Health, New-born Care, Pediatric Nursing, Kangaroo Mother Care, Conventional Cuddling Care, Primigravida Mothers, Maternal and Infant Care, Nursing Education, Structured Teaching Program, Knowledge Assessment, Pre-test and Post-test Design, Effectiveness Evaluation, Paired t-test, Chi-square Test, Hospital Settings, India, Public Health, Nursing Interventions, Health Promotion, Patient Care, Research Methodology, Evidence-Based Practice

