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Original Article

Effectiveness of a Structured Teaching Programme on Knowledge Regarding Kangaroo Care among Postnatal Mothers of Low Birth Weight Babies

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Abstract

Background: Low birth weight (LBW) infants are highly vulnerable to hypothermia, infections, and increased mortality. Kangaroo Mother Care (KMC) is a low-cost, evidence-based intervention, but its success depends on maternal knowledge.

Materials & Methods: A pre-experimental one-group pretest–posttest design was used with 60 mothers in Bangalore.

Results: The mean knowledge score increased from 9.45 to 17.82 ($t = 18.62$, $p < 0.001$). **Conclusion:** STP is highly effective in empowering mothers and improving neonatal care standards.

Keywords: Kangaroo Mother Care (KMC); Structured Teaching Programme; Knowledge; Postnatal Mothers; Low Birth Weight Babies

Introduction

Child health is the foundational pillar of a thriving family and the ultimate wealth of a nation. The birth of a newborn represents one of the most significant milestones in the human experience, bringing a "bundle of joy" to the home. However, while every newborn is perceived as a precious addition, the transition to parenthood also brings immediate responsibilities, significant behavioral changes, and altered family dynamics. When a child is born with health complications, such as low birth weight (LBW), the initial joy of the family can quickly turn into distress and anxiety. In the modern healthcare landscape, maintaining the health of the neonate is the most precious gift a mother can provide, but this requires specialized knowledge and support systems to be successful[1].

The global burden of neonatal mortality remains a staggering public health crisis, with an estimated 5 million deaths occurring annually. A stark disparity exists in these figures: only 2% of these deaths occur in developed nations, while the remaining 98% take place in developing countries. South Asia experiences the highest neonatal mortality rates, accounting for nearly 2.0 million deaths each year. India alone contributes approximately 60% of this regional burden, representing 1.2 million newborn deaths annually. A significant portion of these deaths is attributed to complications arising from low birth weight and prematurity, which make infants highly susceptible to environmental stressors[1,3].

Low birth weight is internationally defined as a birth weight of less than 2.5 kg. In India, the incidence of LBW is approximately 26%, and the mortality rate for

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these infants is nearly 20 times higher than that of babies with normal birth weight. The etiology of LBW is often multifactorial, rooted in maternal malnutrition, anemia, heavy physical labor during pregnancy, hypertension, and low socio-economic status. These infants face immediate life-threatening challenges, including birth asphyxia, hypothermia, cerebral hemorrhage, and systemic infections. Consequently, the care of LBW babies necessitates precise management of body temperature, nutrition, and infection control to ensure survival and long-term developmental health[8,9].

Kangaroo Mother Care (KMC) has emerged as a revolutionary, holistic, and family-centered approach to neonatal care. Originated in Bogota, Colombia, in 1983 by Dr. Edgar Rey and Hector Martinez, this method was initially developed to address the critical shortage of incubators. KMC is characterized by early, continuous, and prolonged skin-to-skin contact between the mother and her infant. By placing the unclothed, diapered infant in an upright position against the mother's bare chest—similar to a marsupial's pouch—the mother acts as a "human incubator," providing biologically controlled heat and security. This method allows the mother to reclaim her rightful place in the management of her neonate, transforming her from a passive observer into an active provider of life-saving care[5,7].

The physiological and psychological benefits of KMC are extensively documented. The direct skin-to-skin contact provides an excellent source of warmth, effectively preventing neonatal hypothermia, which affects up to 80% of infants born in some hospital settings. KMC helps regulate the infant's heart and breathing rates, promotes successful breastfeeding, and leads to more rapid weight gain. Furthermore, infants in KMC spend more time in deep sleep and experience fewer episodes of crying and apnea. For the mother, the physical closeness builds confidence in her ability to care for her fragile infant, significantly reducing maternal stress and fostering a deep, unbreakable bond[12,17].

Despite the overwhelming evidence of its efficacy, the utilization of Kangaroo Care remains suboptimal in many Indian hospitals. Barriers include a lack of sophisticated equipment, a shortage of trained personnel, and, most importantly, a lack of awareness among mothers. Many hospitals are unable to provide traditional incubator care at scale, making KMC a scientifically sound and cost-effective alternative. However, the success of KMC is entirely dependent on the mother's understanding of the technique and its benefits. Inadequate maternal knowledge can lead to improper practice, which may compromise the baby's health. Therefore, there is an urgent need for structured educational interventions to empower mothers with the skills necessary to provide high-quality care to their LBW infants[18,20].

The researcher recognized that while mothers are the primary guardians of their children's future, they often feel helpless when faced with the complexities of LBW care. By implementing a Structured Teaching Programme, healthcare providers can bridge the gap between clinical necessity and maternal practice. This study aims to assess how such a programme influences maternal knowledge, ultimately promoting the healing process and improving the survival rates of vulnerable newborns in the Bangalore region. Providing mothers with evidence-based knowledge is not just a clinical requirement; it is a vital step in ensuring that every LBW infant has a chance to thrive and participate in the nation's future[12].

Materials & Methods

- **Study Design:** Pre-experimental one-group pretest–posttest design.
- **Setting:** Selected hospitals of Bangalore.
- **Sample:** 60 postnatal mothers of LBW babies selected via convenience sampling.
- **Tool:** A structured knowledge questionnaire (Reliability r = 0.82).
- **Intervention:** A Structured Teaching Programme (STP) including a lecture and demonstration on KMC.

Result

The data analysis reveals a highly significant impact of the teaching programme on maternal knowledge levels.

Table 1: Comparison of Pretest and Posttest Knowledge Scores (n = 60)

Knowledge Test	Mean Score	Standard Deviation	t-value	p-value
Pretest	9.45	2.31	**18.62**	**< 0.001**
Posttest	17.82	2.14		(Highly Significant)

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Table 2: Distribution of Mothers According to Level of Knowledge

Knowledge Level	Pretest n (%)	Posttest n (%)
Inadequate	42 (70%)	4 (6.7%)
Moderate	16 (26.7%)	18 (30%)
Adequate	2 (3.3%)	38 (63.3%)

Table 3: Association Between Pretest Knowledge and Selected Demographic Variables

Variable	$\chi 2$ value	p value	Significance
Age	6.12	< 0.05	Significant
Educational status	9.34	< 0.05	Significant
Parity	2.10	> 0.05	Not significant

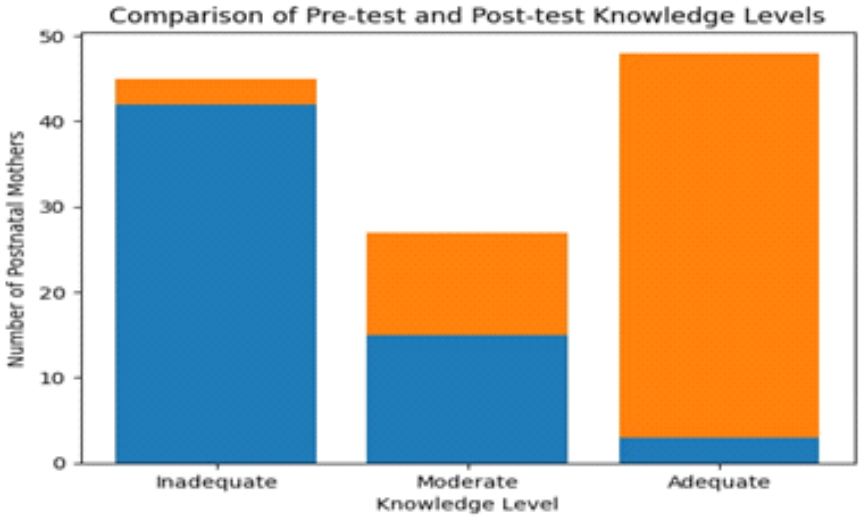

Figure 1: Bar diagram showing comparison of pre-test and post-test knowledge levels regarding Kangaroo Care among postnatal mothers

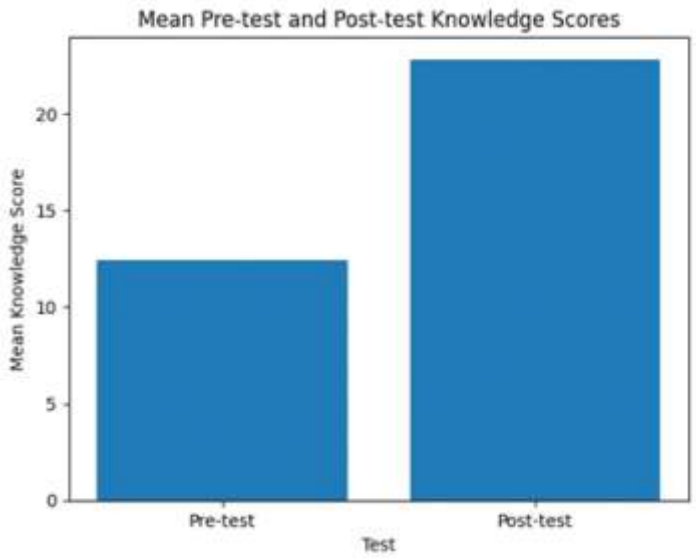

Figure 2: Bar diagram showing mean pre-test and post-test knowledge scores.

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The post-test mean score was considerably higher than the pre-test mean score, indicating the effectiveness of the structured teaching programme.

Discussion

The findings of this study demonstrate a marked deficiency in baseline knowledge among postnatal mothers regarding KMC, with 70% scoring in the "Inadequate" category during the pretest. However, the post-intervention results show a dramatic shift, with 63.3% of mothers achieving "Adequate" knowledge.

These results are consistent with the work of Charpak et al.[7] and Anderson et al.[8], who established that maternal education is the single most important factor in the successful home-based implementation of KMC.

Conclusion

The Structured Teaching Programme was highly effective in improving knowledge regarding Kangaroo Mother Care among postnatal mothers. Empowering mothers with these skills can significantly reduce the risks associated with low birth weight.

Nursing Implications

- **Clinical Practice:** KMC education should be standardized as part of the NICU discharge checklist.
- **Community Health:** Health workers should be trained to follow up on KMC practices at The Home Level.

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Conflicts of interests: There is no conflict of interest

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