

# A Study to Compare the Effectiveness of Incubator Care Vs Incubator Care with Kangaroo Care on Selected Factors among Babies Admitted in NICU

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**Abstract:** Kangaroo mother care is an intervention in which a diaper clad infant is held skin to skin next to parent's chest. Infant benefits include improvement in thermoregulation, oxygenation, breathing pattern stability, weight gain and increased quiet sleep. An infant incubator is an area of high degree of isolation, to provide optimum conditions of temperature, humidity and oxygen concentration for individual survival. Both Kangaroo mother care and infant incubator are equally beneficial to babies in maintaining thermo neutral temperature and prevent energy expenditure. The conceptual framework selected for the study was based on the concept of Betty Neuman's System, Theory postulated by Betty Neuman(1972). A comparative and evaluative approach was adapted for the study. The research design used for this study is Pre experimental two group pre test – post test design. This study was conducted in P.P.K. Hospital, Marthandam, K. K. District by using Non probability convenience sampling technique was used. A sample of 50 NICU admitted babies, 25 babies were selected for incubator care as Group A and 25 babies were selected for incubator care with kangaroo care as Group B. Demographic profile and observation check list was used to collect the data. The data was planned to analyze on the basis of objectives and hypothesis of the study. The statistical figure outlined that, the majority of babies got better improvement in selected factors after incubator care with Kangaroo care than Incubator care.

**Keywords:** Incubator Care, Incubator Care with Kangaroo Care, Effectiveness, Selected Factors

## 1. Introduction

The birth of a new born is one of the most awe inspiring and emotional events that can acquire in one's life time. Management of new born includes initiation and maintenance of patent airway, prevention of hypothermia, prevention of infection, protection from injury, protection of attachment, education of care givers on new born care and provision of additional information and support for the mothers.

Adjustment to extra uterine life is the key step after the birth of the newborn baby. Nature itself has given us many examples as in the case of the Kangaroo and Koala bears care for their young ones keeping them warm in their pouch, tribal woman strap their child close to their chest. Kangaroo care is an intervention in which a diaper clad preterm infants is held skin to skin next to parent's chest. It has been useful for infants even below 1000gms. Infant's benefits include improvement in thermoregulation, oxygenation, breathing pattern stability, weight gain and increased quiet sleep.

The incubator is the ideal environment for the infant, who is unable to thermo - regulate. Appropriate Nursing Care and assessment can be performed whether the infant is naked or dressed. The air temperature of the incubator is adjusted according to the infant's need.

Bonding or attachment, It is an affective bond between the mother and the neonate that is specific to them and from which both gain security. It is the first social relationship for the neonates.

Both Kangaroo mother care and infant Incubator are equally beneficial to babies in maintaining thermo-neutral temperature and prevent energy expenditure.

## 2. Objectives

- 1) To assess the selected factors among babies before and after incubator care (Group A).
- 2) To assess the selected factors among babies before and after incubator with kangaroo care (Group B).
- 3) To determine the effectiveness on selected factors among babies receiving incubator care.
- 4) To determine the effectiveness on selected factors among babies receiving incubator care with kangaroo care.
- 5) To compare the effectiveness between incubator care and incubator care with kangaroo care among babies admitted in NICU.
- 6) To associate the pretest score of incubator care (Group A) with selected demographic variables.
- 7) To associate the pretest score of incubator care with kangaroo care (Group B) with selected demographic variables.

## 3. Description of the tool

It consists of Demographic profile and observation check list.

Part – I Demographic profile-Baby  
Part – II Physiological measurements

Temperature is measured by thermometer. Heart rate and respiratory rate are measured by pulse - oxymeter.

Part – III Observation check list  
Section- A Check list for reflexes  
Section- B Check list for baby's activity

## Research Approach

In view of the nature of the problem and to accomplish the objective of the study a comparative and evaluative

Volume 7 Issue 1, January 2018

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approach was adapted. It is an experimental research that focuses on obtaining information regarding the physiological measurements, reflexes and baby's activity.

**Research Design**

Pre experimental two group pre test – post test design.

EA - O1- X1 - O2  
 EB - O1- X2 - O2

**Setting of the study**

The study was conducted in P.P.K. Hospital, Marthandam, K. K. District which is 150 bedded hospital with separate NICU. The setting for the study was NICU. There are 4 incubator and 1 separate room for kangaroo care. Approximately 3-4 babies receiving incubator care in a day.

**Population**

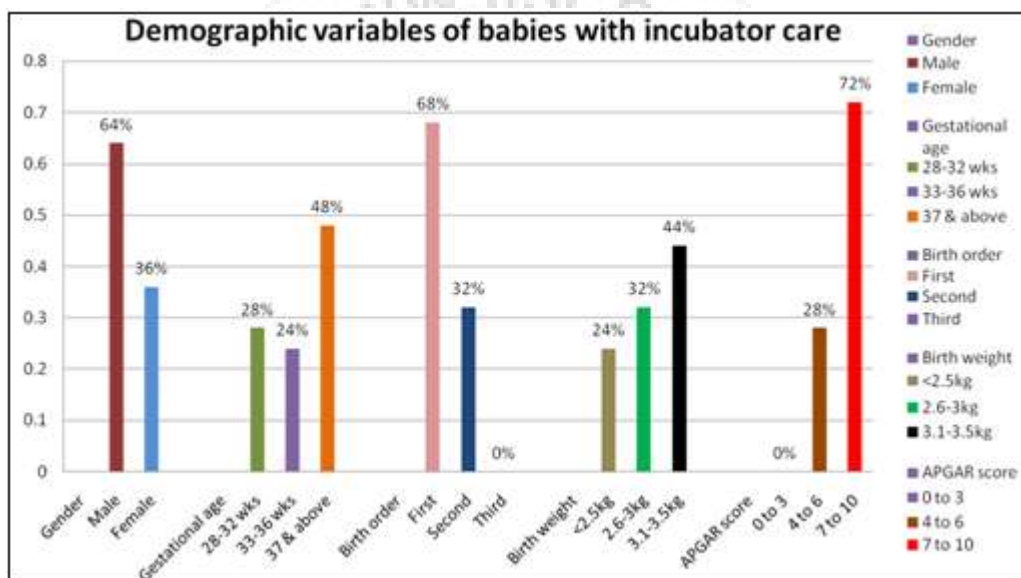
Population represents the entire group of all newborns which meet certain criteria for inclusion in the study. Population of the study comprises neonates admitted in NICU in P.P.K. Hospital, Marthandam, K. K. District.

**Sample size and Sampling Technique**

The sample size consists of 50 newborns admitted in the NICU. Non probability convenience sampling technique was used on the basis of inclusion criteria. Simultaneously 25 babies were selected for incubator care as Group A and 25 babies were selected for incubator care with kangaroo care as Group B.

**4. Major Findings of the Study**

Among 25 incubator care with kangaroo care babies, there were 14(56%) male and 11(44%) females. In that, 8(32%) babies were between 28-32 weeks, 8 (32%) babies were between 33-36 weeks and 9(36%) babies were 37 and above. Regarding birth order of the baby, 16(64%) were first born, 8(32%) were second born and 1(4%) were third born. Regarding birth weight of the baby 8(32%) were less than 2.5 kg, 8(32%) were 2.6-3kg and 9(36%) was 3.1-3.5kg. Regarding APGAR score at birth, 3(12%) were 0-3, 10(40%) were 4-6 and 12(48%) were 7-10



**5. Results and Discussion**

The findings showed that among 25 incubator care babies, 10(40%) were satisfactory and 15(60%) were good in pretest. In the post test 25(100%) were good.

The findings showed that, among 25 incubator care with kangaroo care babies, 16(64%) were satisfactory and 9(36%) were good in pretest. In the posttest 25(100%) were good.

The mean physiological measurement score in Group-A before and after incubator care was 9.68 and 11 respectively. The paired 't' test value is 3.42 (p<0.05). The 't' test value was found significant.

The mean reflexes score in Group-A before and after incubator care was 17.48 and 19.4 respectively. The 't' test value was 3.34 (p<0.05). The 't' test value was found significant.

The mean baby's activity in Group-A before and after incubator care was 9.16 and 10.64 respectively. The 't' test value was 3.81 (p<0.05). The calculated value is more than the table value. So, the finding was significant. Hence H<sub>1</sub> is supported

The mean posttest physiological scores in Group-A and Group-B after incubator care and incubator care with kangaroo care were 11 (S.D=0.09) and 11.4 (S.D=10) respectively. The independent 't' test value was 3.08 (p<0.05). The calculated value was more than the table value.

The mean posttest reflexes in Group-A and Group-B after incubator care and incubator care with kangaroo care were 19.4 (S.D=0.76) and 20.08 (S.D=1.35) respectively. The independent 't' test value was 2.18 (p<0.05). The calculated value was more than the table value.

The mean posttest baby's activity in Group-A and Group-B after incubator care and incubator care with kangaroo care

were 10.64 (S.D=0.96) and 11.6 (S.D=1.65) respectively. The independent 't' test value was 4.14 ( $p < 0.05$ ). The calculated value was more than the table value.  $H_3$  is supported.

In physiological measurements, observational checklist for reflexes and baby's activity, the posttest mean score is higher in Group-B than in Group-A. Therefore it is clearly proved by this study among babies incubator care with kangaroo care provided for better improvement of selected factors than incubator

The study to find the association between the selected demographic variables such as gender, gestational age in weeks, birth order of the baby, birth weight of the baby and APGAR Score at birth of the Group-A and pretest results. Chi-square values were calculated to find the association (Table 8). The association of gender and incubator care ( $X^2 = 4.17$ ), gestational age and incubator care ( $X^2 = 17.48$ ), birth order and incubator care ( $X^2 = 1.1$ ), birth weight and incubator care ( $X^2 = 14.39$ ), APGAR Score and incubator care ( $X^2 = 14.58$ ). The demographic variables of gestational age, birth weight and APGAR Score were significant. Others did not show any significant association. Hence  $H_4$  is supported.

The study to find the association between the selected demographic variables such as gender, gestational age in weeks, birth order of the baby, birth weight of the baby and APGAR Score at birth of the Group-A and pretest results. Chi-square values were calculated to find the association (Table 9). The association of gender and incubator care with kangaroo care ( $X^2 = 0.19$ ), gestational age and incubator care with kangaroo care ( $X^2 = 17.51$ ), birth order and incubator care with kangaroo care ( $X^2 = 0.57$ ), birth weight and incubator care with kangaroo care ( $X^2 = 11.28$ ), APGAR Score and incubator care with kangaroo care ( $X^2 = 3.17$ ). The demographic variables of gestational age and birth weight are significant. Others did not show any significant association. Hence  $H_5$  is supported.

From the above discussion it was concluded that incubator care with kangaroo care have better effect among babies than incubator care.

## 6. Conclusion

Based on the findings the following conclusions were drawn.

- The effectiveness of incubator care with kangaroo care was high, compared to the incubator care.
- The study reveals that there was a significant association with incubator care and gestational age, birth weight and APGAR score.
- The study reveals that there was a significant association between incubator care with kangaroo care and gestational age and birth weight.

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