

A Study to Assess the Effectiveness of Preterm Initiatives on Selected Parameters among Preterm Neonates in Narayana Medical College Hospital at Nellore, A.P.

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ABSTRACT

Background: The preterm infants have been similar with the term infants in such cases are thermoregulatory issues, glucose homeostasis, respiratory compromises, hyperbilirubinemia, feeding intolerance, and infections. The purpose of the preterm initiatives are to improve clinical outcomes and reduce both NICU and paediatric admissions. The primary goals of preterm initiatives are to reduce preterm complications.^[1]

Aim: The aim of the study was to evaluate the effectiveness of preterm initiatives on selected parameters among preterm neonates.

Objectives: 1. To assess the selected parameters among preterm neonates. 2. To assess the effectiveness of preterm initiatives on selected parameters among pre term neonates. 3. To associate the effectiveness of preterm initiatives on selected parameters with the selected demographic variables among postnatal mothers and preterm neonates.

Methods: A quantitative approach with an experimental research with pre test post test control group design, 60 preterm neonates were selected by using non-probability purposive sampling technique.

Results: Study revealed that, in experimental group, pretest, 11(37%) had fair outcome, 9(30%) had poor outcome and 10(33%) had very poor outcome. In post test, 26(87%) of them had fair outcome, 4(13%) of them had poor outcome. In control group, pre test, 10(33%) had fair outcome, 12(40%) had poor outcome and 8(27%) had very poor outcome. In post test, 11(37%) had fair outcome, 13(43%) had poor out come and 6(20%) had very poor outcome.

Conclusion: The study concluded that the preterm initiatives such as massage, eye care, cord care, kangaroo mother care and breast feeding were highly effective on preterm neonatal outcome.

Key Words: Preterm initiatives, selected parameters, preterm neonates.

INTRODUCTION

The preterm infant, defined as any infant born between 34 and 36 weeks of gestation, calculating from the first day of last menstrual period is arbitral defined as preterm newborn. Every year, fifteen million babies are born prematurely and more than one million of those babies do not

survive. Preterm birth is the most common complication of pregnancy. It is the most common cause of newborn death around the world.^[3]

The preterm infants have been similar with the term infants in such cases are thermoregulatory issues, glucose homeostasis, respiratory compromises,

hyperbilirubinemia, feeding intolerance, and infections. The purpose of the preterm initiatives are to improve clinical outcomes and reduce both NICU and paediatric admissions. The primary goals of preterm initiatives are to reduce pre term complications. [4]

One type of thermo regulation method is, kangaroo mother care (KMC). Especially this particular method is usable for preterm neonates where the newborn is held skin-to-skin with mother, father, or substitute caregiver. Colostrum is very important one especially for preterm babies. If the newborn is too weak, mother can express her milk and this can be fed to the newborn through nasal gastric tube feeding. The umbilical cord region is more prone to get an infection. So the cord care is necessary to prevent cross infection. The cord care is, just leave the area to facilitate drying. Check signs of infection such as inflammation or an offensive odor. The cord usually separates from the newborn within 7 to 10 days. Let the cord clamp may remain until separation. The eyes of preterm neonates are delicate and are prone to get infections such as, ophthalmia neonatorum. Hence, meticulous observation and proper care must be ensured. [5]

NEED FOR THE STUDY

WHO Report on Preterm Birth, In Asia and Africa like continents are having majority of preterm deaths are occurring with birth trauma, infection, prematurity, asphyxia and diarrhea. Approximately more than 15 million babies are born in the world. In that, nearly 10 million babies prematurely die shortly after birth, others are suffered some type of lifelong physical, neurological, or educational disability, often at great cost to families and society. [2]

The annual prevalence rate associated with preterm birth in countries is given below. China-1,172,300, Nigeria-7,7360, Pakistan-7,48,100, Brazil-279,300. But in United States, at least 26.2 billion preterm births are occurring. That is, nearly 12 out of every 100 babies born were premature, and this rate has increased by

30% since 1995. The Institute of Medicine in 2007 says that, The average length of hospital stay was nine times as long for a preterm newborn (13 days), compared with a newborn born at term (1.5 days). [2]

A prospective study was conducted, to find out the early breast feeding outcome among preterm infants. The mothers who delivered 34-41 weeks in 1,860 mothers from July 2011 to June 2012. The sampling technique were non probability convenient method. This study was in the basis of newborn friendly hospital initiatives. The study has been concluded that, high hospital support was associated with increased exclusive breast feeding. The result of the study was just 16.4% of preterm infants experienced such support compared with early term (37.9%) and term (30.7%) infants. Preterm versus term infants were less likely to excessive breast feed. [6]

A study was conducted to assess the effects of maternal - infants skin to skin contact (SSC) versus standard contact (SC) on low birth weight infants. Simple random sampling method was used as sampling technique with co-relational sampling design. Fifty infants with birth weight less than 1500 g. and whose mothers planned to breast feed randomized to 2 groups. SSC (experimental) and SC(control). In the SSC infants were clothed in diaper and held upright between mother's breasts. In SC group, the infants were clothed and held in cradle. In the result of the study, the oxygen saturation was higher during SSC than SC.(P=<0.01). For maintain weight of low birth weight newborn, there should be needed a higher oxygen saturation and are less likely to have desideration to less than 90 % than those infants exposed to SC. [7]

PROBLEM STATEMENT

A study to assess the effectiveness of preterm initiatives on selected parameters among preterm neonates in Narayana Medical College Hospital at Nellore.

OBJECTIVES OF THE STUDY

1. To assess the selected parameters among preterm neonates.

2. To assess the effectiveness of preterm initiatives on selected parameters among pre term neonates.
3. To associate the effectiveness of preterm initiatives on selected parameters with the selected demographic variables among postnatal mothers and preterm neonates.

HYPOTHESES:

Research hypothesis

H₁: There is a statistically significant difference on selected parameters of preterm babies after preterm initiatives.

H₂: There is a significant association between the effectiveness of preterm initiatives on selected parameters with the socio demographic variables among postnatal mothers and preterm neonates.

DELIMITATIONS

The study is delimited to:

- Preterm babies admitted in NMCH
- Data collection period of 6 weeks
- Sample size of 60 preterm neonates.

MATERIALS AND METHODS

Research approach: The quantitative research approach.

Research design: An experimental research with pre test post test control group design

Setting: The study conducted at Narayana Medical College Hospital, Nellore

Target population: Refers to all preterm neonates.

Accessible population: The preterm neonates admitted in NMCH Nellore

Sample: The preterm neonates admitted in Narayana Medical College Hospital

Sampling technique: Non-probability purposive sampling technique.

Sample size: In this study, a sample of 60 preterm babies, among them, 30 babies are assigned to experimental group and other 30 babies were control group.

Criteria for sample selection

Inclusive criteria:

- Both male and female preterm neonates
- Babies born between 28 to 36 weeks of gestation

Exclusive criteria:

- The term newborn babies.

- The baby with serious disease conditions.

VARIABLES

Independent variable: Preterm initiatives (Massage, eye care, cord care, KMC and breastfeeding).

Dependent variables: Weight, APGAR score and reflexes of preterm neonates.

Extraneous variables: Ventilator, incubator, formula feeding and total parental nutrition

Demographic variables

It includes demographic data of mother and preterm neonates, which includes age of mother gestational weeks, education, occupation, income, place of residence, type of family, mode of delivery. The demographic variable of newborn includes age, gender, and birth weight of preterm neonates, weight, APGAR score and reflexes of preterm neonates.

DESCRIPTION OF THE TOOL

The tool is divided in to two parts.

Part I: It deals with socio demographic variables.

Part II: It consist of observational check list to assess preterm parameters such as APGAR, weight, reflexes, skin integrity and so on.

Scoring key: The observational checklist consists of 19 items, each item has three components. Each component is given a score between 1-3 and the total is summed up. (Very poor -1, Poor -2, Fair -3)

Score interpretation

SCORE	INTERPRETATION
1-19	Very poor
20 -38	Poor
39 -57	Fair

INTERVENTION PROTOCOL:

- Massage:** Gentle massage of preterm infant with coconut oil all over the body everyday for 15 minutes is effective.
- Cord care:** No special care is to be provided. Let the stump fall off naturally. Be aware with signs of local infection such as, foul smelling, fever of 100 °F or higher.

- c) **Eye care:** Wash the hands and take a sterile wet cotton swab and wipe it from inner canthus to outer canthus of the eye. Use a separate swab for each eye.
- d) **Kangaroo mother care (KMC):** Kangaroo mother care is provide for four hours by placing the preterm neonates over mother’s chest.
- e) **Breast feeding:** Exclusive breast feeding for every 2nd hourly and on demand with a proper latch on is encouraged

RESULTS & DISCUSSION

Table-1: Frequency and percentage distribution on effectiveness of preterm initiatives on selected parameters among preterm neonates in experimental and control group. (N=60)

S. No	Neonatal outcome	Experimental group (n=30)				Control group (n=30)			
		Pre test		Post test		Pre test		Post test	
		F	%	F	%	F	%	F	%
1.	Fair	11	37	26	87	10	33	11	37
2.	Poor	9	30	4	13	12	40	13	43
3.	Very poor	10	33	-	-	8	27	6	20

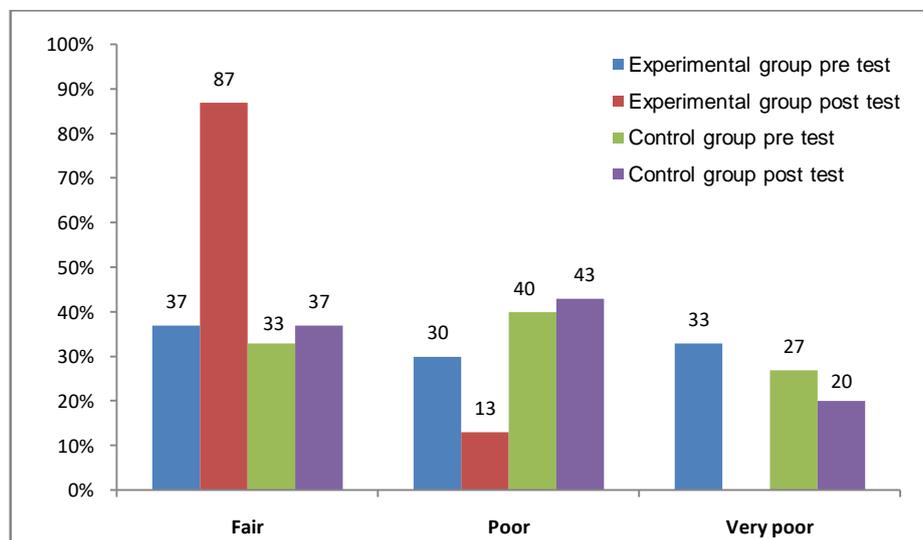


Fig-1: Percentage distribution effectiveness of preterm initiatives on selected parameters among preterm neonates

Table-2: Effectiveness of preterm initiatives on selected parameters among preterm neonates in experimental group and control group. (N=60)

Group	Criteria	Mean	SD	Paired t- test
Experimental group	Pre-test	37.90	2.845	C=4.77 T=3.66 df=29 P<0.05 S*
	Post test	57.0	5.902	
Control group	Pre-test	27.0	2.644	C=2.436 T=3.66 df=29 P<0.05 NS
	Post test	29.50	2.544	

III. Association between preterm initiatives on selected parameters and socio demographic variables in experimental and control group:

In experimental group, there was a significant association between education of

the mother and preterm initiatives on selected parameters. And in control group, no demographic variable has got association with preterm initiatives.

MAJOR FINDINGS OF THE STUDY:

- ❖ In experimental group, pre test, 11(37%) had fair outcome, 9(30%) had poor outcome and 10(33%) had very poor outcome. In post test, 26(87%) of them had fair outcome, 4(13%) of them had poor outcome. In control group, pre test, 10(33%) had fair outcome, 12(40%) had poor outcome and 8(27%) had very poor outcome. In post test, 11(37%) had fair outcome, 13(43%) had poor out come and 6(20%) had very poor outcome.

- ❖ The experimental group pre test mean value was 37.90 with Standard deviation 2.845. The post test mean value is 57.00 with Standard deviation is 5.902. The calculated value of paired t test is 4.77 and the table value is 3.66. The calculated value is greater than the table value, hence there was a statistical significant difference in the post test at the level of $p < 0.05$. So, the research hypothesis (H_1) is accepted.
- ❖ In experimental group, there was a significant association between education of the mother and preterm initiatives on selected parameters. And in control group, no demographic variable has got association with preterm initiatives.

CONCLUSION

The study concluded that the preterm initiatives such as massage, eye care, cord care, kangaroo mother care and breast feeding were highly effective on preterm neonatal outcome.

RECOMMENDATIONS

- A similar study can be replicated on large sample size, in different settings with in different population.
- A longitudinal study can be conducted on pre term initiatives on selected Para meters among late and early pre term neonates.

- Similar study can be conducted to assess the effectiveness of structured teaching programme on among postnatal mothers.

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