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"A Quasi experimental study to assess the effectiveness of Kangaroo Mother Care on physiological parameters of low birth weight babies at selected District Hospitals of Punjab."

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Abstract

The current quasi experimental study is a result of pilot study conducted among 60 low birth weight babies (30 experimental group and 30 control group) at Selected District Hospitals of Punjab. Non probability purposive sampling technique is used to allocate the samples and data were collected with the help of demographic questionnaire and self-structured questionnaire. Kangaroo mother care intervention with routine care was given to experimental group. Permission was taken from the ethical committee of Institute to conduct the study. Findings of the study revealed that after intervention in experimental group there is good physiological parameters outcome among low birth weight babies than control group. So, there is a significant association found between experimental group and control group in the level of parameters among low birth weight babies.

Introduction

Children's health is the cornerstone of the family and the prosperity of the country, and babies are the most priceless gifts on earth. The most significant personality in the household is the newborn. Premature or immature births are defined as those weighing 2.500 grammes (5 pounds, 8 ounces) or less at delivery, or those occurring before 37 full weeks of pregnancy. They could experience a variety of health and developmental issues, such as: Neurodevelopmental issues (e.g. cerebral palsy, cognitive delay). Growth failure, reactive airway illness, congenital malformation, and hearing and visual impairments.

In 2019 saw the release of Survive and Thrive: Transforming Care for Every Small and Sick newborn by WHO and UNICEF. This study focuses on the ways that nations can improve care for infants who are born too small or too soon, including by increasing funding, providing 24-hour care for newborns, and fostering stronger relationships with families.

Objectives of the study

1. To assess the pre-test level of physiological parameters of low birth babies in intervention and conventional group.
2. To assess the post-test level of physiological parameters of low birth babies in intervention and conventional group.
3. To compare the physiological parameters of low birth babies in intervention and conventional group.
4. To find out association between physiological parameters of low birth weight babies with selected demographic and clinical variables.

Methodology

A Non probability purposive sampling technique with quantitative research approach was adopted for current pilot study. Pilot study consists of 60 samples (30 experimental group and 30 control group) at selected District Hospitals of Punjab who fulfilled the inclusion criteria. A quasi experimental study was done to assess the effectiveness of kangaroo mother care on level of physiological parameters among low birth weight babies. Socio demographic tool and self-structure questionnaire regarding physiological parameters was used to measure effectiveness of kangaroo mother care was developed and utilized for data collection. The Reliability of tool regarding effectiveness of kangaroo mother care on level of physiological parameters towards self structure questionnaire was found to be 0.854. Ethical consideration was taken from ethical committee. Data has been collected within 10 days' time period of the month of july 2022.

Findings of the Study: Major Findings are:

Regarding the mother's age in the control group, out of 30 samples, 18 (or 60%) had mothers who were between the ages of 24 and 29. In contrast, out of 30 samples in the control group, 23 (76.7%) of the mothers were between the ages of 24 and 29. Regarding the sort of marriage in the control group, out of 30 samples, 17 (or 56.67%) were not consanguineous marriages. However, of the 30 samples in the control group, 19 (63.33%) were not consanguineous. Out of 30 samples, 23 (76.67%) belonged to the control group's faith and were Hindus. While in the control group, 17 (56.67%) of the 30 samples were Hindus. Out of 30 examples in the control group, 20 (66.67%) of the residents lived in rural areas. Out of the 30 samples in the experimental group, only 18 (or 60%) were metropolitan dwellers. Out of 30 samples in the control group, 17 (56.67%) only had a basic education. Out of 30 samples in the experimental group, 16 (53.33%) had a secondary degree. Out of 30 samples, 23 (76.67%) of them work in the private sector with regard to the employment in the control group. While 20 (66.67%) of the 30 examples in the experimental group are employed privately. In terms of revenue, out of 30 samples in the control group, 20 (66.67%) make between Rs. 5001 and Rs. 10,000, whereas in the experimental group, 13 (43.33%) of the samples make between Rs. 10001 and Rs. 20,000. Regarding prior knowledge of KMC, out of 30 samples in the control group, 20 (66.67%) were aware of KMC through friends, whereas 14 (46.67%) of the samples in the experimental group were aware of KMC through friends.

Figure: 1 Comparison of pre-test and post-test difference in Mean and SD on level of physiological parameters among preterm infants in control group.

n=30

LEVEL OF PHYSIOLOGICAL PARAMETERS	CONTROL - PRE TEST SCORES		CONTROL POST TEST SCORES		MEAN DIFFERENCE	't'- VALUE	p- VALUE
	Mean	SD	Mean	SD			
Weight gain	1.48	0.21	1.47	0.22	0.01	2.33	0.03*
Temperature	97.07	0.52	96.6	0.05	0.42	4.47	P<0.001***
Respiratory	35.27	1.91	32.13	0.89	3.13	7.61	P<0.001***
Heart rate	84.5	6.25	76.33	5.33	8.2	15.58	P<0.001***
Oxygen Saturation	88.87	1.79	88.07	2.65	0.8	3.52	0.001**

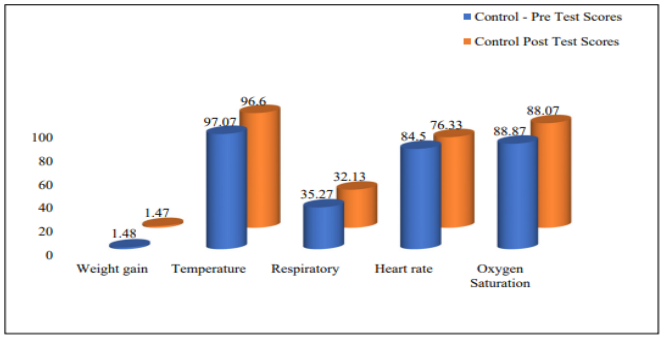
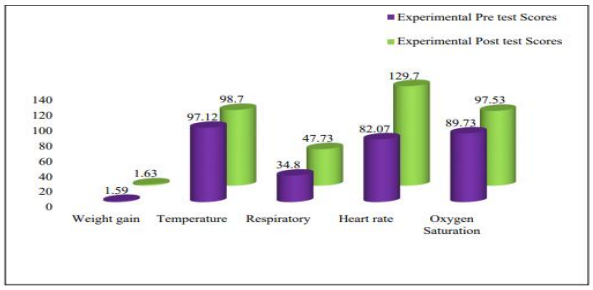


Figure: 1 depicts that weight gain mean score of pre-test (1.48±0.21) almost equals post-test mean score (1.47±0.22), whereas the temperature pre-test mean (97.7±0.52) was slightly higher than the post-test mean (96.6±0.05). The respiratory rate pre-test mean (35.27±1.91) was higher than the post-test mean (32.13±0.89), in regards of heart rate, the pre-test mean score (84.5±6.25) was greatly high than the post-test (76.33±5.33) and the oxygen saturation pre-test mean score (88.87±1.79) which was slightly higher than the post-test mean score (88.07±2.65).

Table: 2 Comparison of pre-test and post-test difference in Mean and SD on level of physiological parameters among preterm infants in experimental group.

n=30

LEVEL OF PHYSIOLOGICAL PARAMETERS	EXPERIMENTAL PRE TEST SCORES		EXPERIMENTAL POST TEST SCORES		MEAN DIFFERENCE	't'- VALUE	p- VALUE
	Mean	SD	Mean	SD			
Weight gain	1.59	0.22	1.63	0.20	0.04	4.47	P<0.001***
Temperature	97.12	0.51	98.7	0	1.57	16.87	P<0.001***
Respiratory	34.8	2.13	47.73	0.69	12.93	31.16	P<0.001***
Heart rate	82.07	3.94	129.7	1.01	47.07	47.1	P<0.001***
Oxygen Saturation	89.73	0.69	97.53	0.81	7.8	36.01	P<0.001***



The figure depicit that weight gain mean score of pre-test (1.59±0.22) was slightly lower that the post-test mean score (1.63±0.20), whereas the temperature pre-test mean (97.12±0.51) was lower than the post-test mean (98.7±0). The respiratory rate pre-test mean (34.8±2.13) was greatly lower than the post-test mean (47.73±0.69), in regards of heart rate, the pre-test mean score (82.07±3.94) was greatly lower than the post-test (129.7±1.01) and the oxygen saturation pre-test mean score (89.73±0.69) which was lower than the post-test mean score (97.53±0.81).

Association between the pre-test level of weight gain in physiological parameter and demographic variable of Preterm infants in control group.

The demographic factor of breastfeeding practises and weight increase in the physiological parameter of the control group were significantly correlated (χ2 table value 0.018*).

Association between the pre-test level of temperature in physiological parameter and demographic variable of Preterm infants in experimental and control group.

According to the above mentioned table, there was a link between the physiological parameter of temperature in the control group and the demographic variable of the baby's weeks and month (χ 2 table value 0.001*). In the physiological parameter of the control group, there was no statistically significant correlation between the demographic variable and respiratory rate, as shown in the aforementioned figure. In the physiological measure of the control group, there was a statistically significant correlation between the demographic variable of gestational age (χ 2 table value 0.01*) and heart rate. The demographic variable of gestational age (χ 2 table value 0.01*) and heart rate showed a statistically significant association in the physiological measure of the control group and temperature in the study group's physiological parameters. The population variable of prior knowledge and the researcher's findings were found to be significantly correlated (χ 2 table value 0.032*), respiratory rate in physiological parameter of experimental group and commencement of breast feeding (χ 2 table value 0.044*). This research found a significant relationship between the physiological parameter of the experimental group's heart rate and the demographic variable of previous information (χ 2 table value 0.008*), the baby's weeks and month (2 table value 0.004*), and the baby's birth week.

DISCUSSION

The research by Murtaza Ghojazedha (2019), Effect of Kangaroo Mother Care on Successful Breastfeeding, confirmed this finding. The necessary information was gathered for this study's comprehensive review and meta-analysis by looking through randomised clinical trials on skin-to-skin breastfeeding, Kangaroo Mother Care, and breast-feeding. Included were 20 stories. We looked at 1,432 and 1,410 newborns in the KMC and CNC groups, respectively. Although the KMC group had a greater success rate of breastfeeding across a range of time slots (RR=1.11(95CI, 0.93-1.34) and RR=1.13(95%CI, 0.92-1.34) based on the time slot and birth weight, respectively), this difference was not statistically significant. The inter-groups differences in the mean scores of Infant Breast-Feeding Assessment Tool (IBFAT) were statistically significant

(P<0.05). Breastfeeding was initiated very sooner in the KMC group, suggesting a statistically significant inter-groups difference -0.72(95%CI, from -0.92 to -0.53) (P<0.05). Majority of the studies had a high risk of bias.

In this pilot study, results showed that both the control group and the experimental group's preterm infants' physiological parameters for weight growth were positively affected by kangaroo mother care. In the control and experimental groups, respectively, the majority post-test was 56.7% and 53.3% the temperature stabilisation for preterm by kangaroo mother care. In the control and experimental groups, the respiratory rate was maintained for preterm babies by kangaroo maternal care in the majority post-test by 53.3% and 100%, respectively. Heart rate maintenance for preterm by kangaroo mother care in control and experimental group majority post-test were 100% and 100% successively oxygen saturation maintenance for preterm by kangaroo mother care in control and experimental group majority post-test were 60% and 100% Therefore, the H1 research hypothesis was approved.

Limitations

By choosing samples from two hospitals, the investigator was able to resolve issues with setting authorization and sample quantity within the allotted time.

CONCLUSION

After the detailed analysis, this study leads to the following conclusion: -

- In context of the control group showed no improvement, the level of physiological parameters was found to be higher in the experimental group.
- The experimental group's degree of physiological parameters improved following the intervention.
- The level of physiological parameters is improved by the attention given to kangaroo mothers.
- The level of physiological parameters and certain demographic variables in the control group as well as the experimental group do not significantly correlate with one another.

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