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Effectiveness of Video Assisted Teaching Regarding Cross Cradle Hold Position on Maternal and Neonatal Outcomes among the Postnatal Mothers

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ABSTRACT

Background: Cross cradle hold also referred to as Transitional hold works well for Mothers who are initial for breastfeeding, with latching difficulties, having flat, inverted nipples, small breasts. Also, it helps in deep latching which helps to improve the level of attachment among newborns. **Aim**: To Evaluate the Effectiveness of Video Assisted Teaching regarding Cross cradle hold position on Maternal and Neonatal outcomes among the Postnatal Mothers. **Methodology:** A total of 92 postnatal mothers were selected based on the inclusion criteria through purposive sampling technique and randomly assigned to the experimental and control group using the lottery method. The pretest was done to assess the maternal and neonatal outcomes for all the mothers in the both experimental and control group on day 0. Video-assisted teaching regarding the Cross cradle holds position was shown to the Experimental group mothers and demonstrated. Post-test assessment of maternal and neonatal outcomes was done among the experimental group on the same day and on days 2, 4, 6 to evaluate the effectiveness of cross-cradle hold position. While among the control group, post-test was done on days 2, 4, and 6. **Result and conclusion:** On comparison of the level of breastfeeding behavior, the calculated unpaired 't' value ($t = 2.631$) was found to be statistically significant at $p<0.01$ level on day 0. Regarding the level of attachment, the calculated unpaired 't' value ($t = 6.722$) was found to be statistically significant at $p<0.001$ level on day 6. On comparison of weight among the newborn, calculated unpaired 't' value ($t = 2.752$), ($t = 2.482$), ($t = 2.619$) was found to be statistically significant at $p<0.01$, $p<0.05$ level on day 0, 2 and 4 respectively. The calculated unpaired 't' value ($t = 2.017$) and ($t = 2.022$) on comparison of nature of sleep was found to be statistically significant at $p<0.05$ level on the day 4 and 6 respectively. Thus, it was proved that Video assisted teaching regarding Cross cradle hold a position among the Postnatal Mothers was found to be effective in improving the Maternal and Neonatal outcomes such as Breastfeeding behavior, Level of Attachment, Weight of the newborn, and Nature of sleep.

1. INTRODUCTION:

Breastfeeding acts as a sole source and ideal nutrition to ensure child health and survival, also provides short and long-term health benefits for both mother and infant. According to UNICEF (2019), revealed that current Exclusive breastfeeding rates up to 6 months were 41%, till 1year was 70% and up to 2 years was 45% globally. It also showed that Non -breastfeeding practices contribute 11.6% of Under 5 mortality rates. [1]

As per Partnership and Opportunities to Strengthen Harmonize Actions for Nutrition in India by IFPRI (2017) revealed that Exclusive breastfeeding rates rate increased from 46.4% to 54.9%, but the Prevalence of breastfeeding has significantly reduced in many states in India. [2]

A Concurrent mixed approach study was done by Ojo M Agunbiade, *et al*., in 2012, its qualitative findings showed that Exclusive breastfeeding was compromised by poor feeding practices and conflicting breastfeeding position was one of the predominant constraints. [3]

Cross cradle positioning also called transitional hold places the baby back in the length of the opposite arm to the feeding breast with mother and infant's abdomen attached and support the baby's head with thumb and forefingers behind the ears [4]. Cross cradle hold position is very easy to learn especially in mother during early breastfeeding, provides comfortable breastfeeding, complete Control over her infant's body, and also mother can easily hold the breast with her free hand [5]. While attaching to the breast, the newborn mouth is ideally at the junction of the hard and soft palate so it provides a comfort zone with his nose free to breathe. [6]

Cross cradle position works well for Mothers who are initial for breastfeeding, with latching difficulties, having flat, inverted nipples, small breasts, large shaggy breasts, and also for IUGR and Preterm babies. [4]

It is reported that some mothers find Cradle hold a position has many early challenges especially when the baby is small and may prefer to practice breastfeeding with the Cross cradle position [6]. It is also reported that Cradle hold position makes latching difficult until 4 weeks and difficult for mothers who are recovering from the cesarean section as it puts pressure over the mother's abdomen while breastfeeding. [7]

Cross cradle position causes extension of the lower jaw of the baby mouth causing will wide open which leads to deep latching provides a bottom approach for the baby to suck and more hindmilk from the bottom of the breast can be emptied. [4]

As reported in the study conducted by Chidozie E (2013), the Majority 80.4% of the breastfeeding mothers are adapting cross-cradle hold position due to comfort of mother/baby (60.8%) and convenience (29.5%)[8]. Also, the study conducted by Bethou adhisivam, *et al*., (2017), has reported that Good attachment (98.7%) was higher among the Video-based education group than the Lactation counseling group (94.7%) and Poor attachment (2%) was observed comparatively lower than the lactation counseling group (5.8%). [9]

Many studies on the Impact of Video-assisted teaching on knowledge, attitude, and practices on Exclusive breastfeeding were conducted. But, very few studies regarding Breastfeeding positions, Maternal and Neonatal outcomes about breastfeeding were conducted. The researcher wanted to explore through conducting a study on "Effectiveness of Video-assisted teaching regarding Cross cradle hold position on maternal and neonatal outcomes".

The main objectives of the study are:

- To assess the Existing level of Maternal and Neonatal outcomes among the Experimental and Control group of Postnatal Mothers.
- To Evaluate the Effectiveness of Video-assisted teaching regarding Cross cradle hold a position on Maternal and Neonatal outcomes among the Experimental group compared to the Control group.
- To associate the Post-test level of Maternal and Neonatal outcomes with their selected Socio-demographic and Obstetric infant variables.

2. MATERIAL AND METHODS:

2.1 STUDY DESIGN:

The research design adopted for this study was Quasi-Experimental research design. It was conducted among the Postnatal mothers admitted in Postnatal and Postoperative annex wards at

Rajiv Gandhi Women and Children Hospital, Puducherry, India. The data collection period was 30 days from 04/11/2019 to 30/11/2019.

2.2 STUDY PARTICIPANTS:

A total of 92 postnatal mothers (46 in the Experimental group and 46 in the control group) who had fulfilled the inclusion criteria, available during the period of data collection were selected using the **Purposive sampling technique and assigned randomly to the Experimental and Control groups by lottery method. Informed consent was obtained from the postnatal mothers and explained about the purpose and benefits of the study.**

2.3 TOOLS: The tools used in the study were

Section –A: Questionnaire to assess the Socio-demographic and Obstetric infant variables.

Section –B: WHO Breastfeeding **assessment** tool to assess the maternal breastfeeding behavior. It has 6 components such as B – Body positioning of mother and baby during breastfeeding, R – Response of baby to breastfeed, E – Emotional status of a mother during breastfeeding, A – Anatomy of the breast, S – Suckling of the baby on breast and T – Time duration of breastfeeding. The total score of the tool was 36.

Section –C: Modified Leff EW's maternal breastfeeding satisfaction and feasibility questionnaire is a Likert scale that assesses the maternal breastfeeding satisfaction, acceptability, comfort, and feasibility of the mothers. The total score was 65 for the maternal satisfaction questionnaire and 60 for the maternal feasibility questionnaire.

Section –D: Jenson's LATCH score is a standardized scoring system to assess the level of Attachment of newborns. The total score was 10.

Section –E: Modified Abraham Sadeh's Brief infant sleep questionnaire (BISQ) to assess the nature of newborn sleep during the first week of life. It assesses the 9 nature of sleep patterns.

Section –F: Checklist to assess the weight of the newborns.

2.4 DATA COLLECTION:

The data was collected among 92 postnatal mothers admitted at Rajiv Gandhi Government Women & Children Hospital, Puducherry, India.

Phase 1: After obtaining informed written consent, a Pretest was done on day 0 to assess Maternal Breastfeeding behavior and Level of attachment of the newborn using the WHO Breastfeeding assessment tool and Jenson's LATCH Score for all the mothers in the both experimental and control group. Mothers delivered by spontaneous vaginal delivery and cesarean section were assessed in the postnatal wards and postoperative annex wards respectively.

Phase 2: After the pretest, Video-assisted teaching regarding Cross cradle hold position was shown to the Experimental group mothers.

Phase 3: Among the Experimental group, the post-test assessment of Maternal Breastfeeding behavior and Level of Attachment of the newborn using the WHO Breastfeeding assessment tool and Jenson's LATCH Score was done on day 0 after administering the video-assisted teaching and also on day 6. Nature of Sleep and Weight of the newborn were assessed on the day 2, 4 and 6 of the postnatal mother using Modified Abraham Sadeh's Brief infant sleep questionnaire and weight checklist respectively. On day 6, the level of breastfeeding satisfaction, acceptability, comfort, and feasibility of the breastfeeding position was assessed using Modified Leff EW's maternal breastfeeding satisfaction and feasibility questionnaire.

Among the Control group, after the pretest on day 0, post-test assessment of Maternal Breastfeeding behavior and Level of Attachment of the newborn was done on day 6 only. Nature of Sleep and Weight of the newborn were assessed on the day 2, 4 and 6 of the postnatal mother. The level of breastfeeding satisfaction, acceptability, comfort, and feasibility of the breastfeeding position was assessed on day 6.

3. RESULTS AND DISCUSSION:

Table No 1: Comparison of Level of Breastfeeding behavior among the Postnatal Mothers between the Experimental and Control group.

N = 92(46+46)

Day	Group	Mean	S. D	Mean Difference Score	Unpaired 't' Test Value
Day 0	Experimental group	21.67	2.98	2.24 (6.2%)	**t = 2.631 p = 0.010, S****
	Control group	19.43	4.94		
Day 6	Experimental group	24.39	1.96	0.22 (0.61%)	t = 0.434 p = 0.666, N. S
	Control group	24.17	2.77		

**p<0.01, S – Significant, N.S – Not Significant

Table 1 has shown that the mean score of Level of Breastfeeding behavior on day 0, in the Experimental group was 21.67±2.98 and in the Control group was 19.43±4.94. Also, on day 6, the mean score in the Experimental group was 24.39±1.96 and in the control group was 24.17±2.77. The calculated unpaired 't' value (t = 2.631) has shown a statistically significant at p<0.01 level on day 0 among the postnatal mothers in the experimental group compared to the control group.

Table No. 2: Comparison of Level of Breastfeeding satisfaction and feasibility among the Postnatal Mothers between the Experimental and Control group.

N = 92(46+46)

Variables	Group	Mean	S. D	Mean Difference Score	Unpaired 't' Test Value
Breastfeeding Satisfaction	Experimental group	57.24	6.78	2.48 (3.8%)	t = 1.431 p = 0.156, N. S
	Control group	54.76	9.59		
Breastfeeding Feasibility	Experimental group	54.13	6.04	2.72 (4.5%)	t = 1.562 p = 0.123, N.S
	Control group	51.41	10.13		

N.S – Not Significant

Table 2 had depicted that the mean score of the Level of Breastfeeding satisfaction in the Experimental group was 57.24±6.78 and in the Control group was 54.76±9.59. The calculated unpaired 't' test value (t = 1.431) was not found to be statistically significant between the experimental and control group. Mean score of Level of breastfeeding feasibility in the Experimental group was 54.13±6.04 and 51.41±10.13 in the Control group. The calculated unpaired 't' test value (t = 1.562) was not found to be statistically significant.

Table No. 3: Comparison of Level of Attachment among the Newborn of Postnatal Mothers between the Experimental and Control group.

N = 92(46+46)

Day	Group	Mean	S.D	Mean Difference Score	Unpaired 't' Test Value
Day 0	Experimental group	6.50	0.84	0.28 (4%)	t = 1.522 p = 0.131, N.S
	Control group	6.78	0.94		
Day 6	Experimental group	8.00	0.63	**0.96 (13.7%)**	**t = 6.722 p = 0.001, S*** **
	Control group	7.04	0.73		

***p<0.001, S – Significant, N.S – Not Significant

Table 3 has shown that the mean score of Level of attachment on day 0, in the Experimental group was 6.50±0.84 and in the Control group was 6.78±0.94. On day 6, the mean score in the Experimental group was 8.00±0.63 and in the Control group was 7.04±0.73. The calculated unpaired 't' value (t = 6.722) was found to be statistically significant at p<0.001 level on day 6 which means that the Video assisted teaching regarding Cross cradle hold positioning improves the level of attachment among the newborns in the experimental group compared to the control group.

Table No 4: Comparison of Weight among the Newborn of Postnatal mothers between the Experimental and Control group.

N =92(46+46)

Day	Experimental group		Control group		Mean Diff.	Unpaired 't' Value
	Mean	S.D	Mean	S.D		
Day 0	2.76	0.54	3.03	0.36	0.26	**t = 2.752 p = 0.007, S****
Day 2	2.59	0.55	2.84	0.36	0.24	**t = 2.482 p = 0.015, S***
Day 4	2.59	0.52	2.85	0.37	0.25	**t = 2.619 p = 0.010, S****
Day 6	2.66	0.54	2.81	0.36	0.16	t = 1.641 p = 0.105, N.S

**p<0.01, *p<0.05, S – Significant, N.S – Not Significant

This table 4 had depicted that the calculated unpaired 't' value (t = 2.752), (t = 2.482), (t = 2.619) was found to be statistically significant at p<0.05 level on day 0, 2 and 4 respectively. It again proved that the Video assisted teaching regarding Cross cradle hold a position has improved the Level of attachment in turn improves the weight pattern among the newborns on days 0, 2, and 4 among the Experimental group compared to the Control group.

Table No. 5: Comparison of Nature of sleep among the Newborn of Postnatal Mothers between the Experimental and Control group.

N = 92(46+46)

Neonatal Outcome	Group	DAY 2			DAY 4			DAY 6		
		Mean	S. D	Unpaired 't' Test value	Mean	S. D	Unpaired t' Test value	Mean	S. D	Unpaired t' Test value
Duration of night awakening	Experimental Group	231.52	91.58	t = 0.881 p = 0.381 N.S	258.26	98.28	**t = 2.017 p= 0.047 S***	280.43	101.63	**t = 2.022 p= 0.046 S***
	Control group	212.61	113.11		213.91	112.18		239.35	93.06	

*p<0.05, S – Significant, N.S – Not Significant

Table 5 had shown that on comparison of Nature of sleep 'Duration of night awakenings' between the Experimental group and Control, the calculated unpaired 't' value (t = 2.017) and (t = 2.022) was found to be statistically significant at p<0.05 level on the day 4 and 6 respectively.

Table No. 6: Association of Post-test Level of Breastfeeding behavior with their selected Socio-demographic and Obstetric infant variables in the Experimental group

N = 46

Variables	Fair		Good		Chi-Square Value
	No.	%	No.	%	
Type of family					**χ^2 =5.841**
Joint	18	39.1	5	10.9	**d.f=1**
Nuclear	10	21.7	13	28.3	**p = 0.016, S***
Gravida					**χ^2 =6.543**
Primi	17	37.0	4	8.7	**d.f=1**
Multipara	11	23.9	14	30.4	**p = 0.011, S***

*p<0.05, S – Significant

Table 6 depicted that On Association of Post - test level of Maternal and Neonatal outcomes on day 6 with the selected Socio demographic and Obstetric infant variables, Level of Breast feeding behaviour had shown statistically significant association with variables such as gravida and type of family at $p<0.05$ level.

Table No. 7: Association of Post - test level of Weight of newborn with their selected socio demographic and obstetric infant variables.

N=46

Obstetric infant variables	Fair		Good		Chi-Square Value
	No.	%	No.	%	
Gravida					
Primi	13	28.3	8	17.4	**χ^2=4.114**
Multipara	8	17.4	17	37.0	**d.f=1** **p = 0.043, S***
Gestational age of newborn					
Term	14	30.4	25	54.3	**χ^2=9.829**
Preterm	7	15.2	0	0	**d.f=1** **p = 0.002, S*****
Birth weight of the infant					
<2.5 Kg	16	34.8	0	0	**χ^2=33.599**
2.5 – 3 Kg	5	10.9	8	17.4	**d.f=2**
>3 kg	0	0	17	37	**p = 0.001, S*****

***p<0.001, *p<0.05, S – Significant

Table 7 depicted that the Weight of the newborn on day 6 had shown a statistically significant association with obstetric infant variables such as gravida, gestational age of newborn, birth weight at $p<0.05$, $p<0.001$, and $p<0.001$ level respectively.

CONCLUSION:

The main conclusions drawn from the study are Video assisted teaching regarding Cross cradle hold a position among the Postnatal Mothers were found to be effective in improving the Maternal and Neonatal outcomes such as Breastfeeding behavior, Level of Attachment, Weight of the newborn, and Nature of sleep of newborn among the Experimental group compared to the Control group.

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