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Effectiveness of breast crawling technique on outcome of third stage of labour among parturient mothers

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Abstract
Background of the study: Labour is a natural process, in third stage of labour the parturient mother faces many problems such as postpartum haemorrhage, retained placenta which may lead to increased mortality and morbidity rate. These can be prevented by breast feeding especially early suckling through breast crawling technique.
Objective: To evaluate the effectiveness of breast crawling on outcome of third stage of labour among parturient mothers in interventional and routine care group.
Research methodology: True experimental, post-test only control group design was adopted. 80 study participants were recruited 40 in each group using simple random sampling technique. Structured questionnaire and observation tools were used to collect the data.
Results: The results revealed that, calculated value of unpaired 't' test for duration and amount of blood loss (31.76), (14.89) was greater than the table value 3.37 significant at $p<0.001$.
Conclusion: The study concluded that the Breast crawling technique was effective on outcome of third stage of labour.

Keywords: Effectiveness, breast crawling technique, outcome of third stage of labour, parturient mothers, skin to skin contact

Introduction

Childbirth is unique, challenging, painful, yet joyful experience in every woman's life. Women goes through a lot of changes physiologically and psychologically with range of emotions like she experiences pain yet joy, there is anxiety yet excitement, there's stress yet hope and all this in the anticipation of bringing a new life into this world [1] Women in child bearing age, growing infants and children together form around 59% of our society. They are more dependent and vulnerable population of the society and are at high risk of morbidity and mortality. Labour is a natural process, the third stage of labour begins upon the completion of birth of the baby and ends with the birth of the placenta. It is also known as placental stage of labour [2]. In third stage, the mother faces many problems such as postpartum hemorrhage, retained placenta, and inversion of the uterus. This may lead to increased mortality and morbidity rate. These problems can be prevented by breast feeding especially early suckling through breast crawling technique. In women breast crawling has its own benefits like, it promotes early expulsion of placenta, reduces blood loss, improves bonding between mother and baby, involution of the uterus to normal size, acts as natural contraceptives and reduces the risk of primary postpartum hemorrhage [3]. Babies have a suckling reflex that enables them to suck and swallow milk. Newborns follow a predictable pattern of pre-feeding behavior when held on their mother's chest immediately after birth [4]. Breast crawl is novel, easy, readily available, evidence based and cost effective miraculous method to initiate breast feeding. It does not require elaborate preparations or instructions and can be performed in all birth settings and units. The breast crawl is a wonderful method to initiate breast feeding and mother - baby interactions at any time are not restricted to nutritional needs alone [5] Newborn suckling at the mother's breast stimulates uterine contractions by releasing the natural Oxytocin secreted in posterior pituitary gland. Breast crawling and early suckling helps in safe delivery of the placenta. The transition from the intra uterine to the extra uterine environment is made more comfortable by the breast crawl. Health care professionals have an important role to play in promoting and practicing early suckling in management of third stage of labour, prevention of infant mortality rate and maternal mortality rate [3].

Statement of the Problem: A study to evaluate the effectiveness of breast crawling technique on outcome of third stage of labour among parturient mothers in a selected tertiary care hospital, Coimbatore.

Objectives

1. To evaluate the effectiveness of breast crawling on outcome of third stage of labour among parturient mothers in interventional and routine care group.
2. To correlate the duration of third stage of labour with the amount of blood loss in interventional and routine care group.
3. To associate the outcome of third stage of labour among parturient mothers in interventional and routine care group with selected obstetric variables.

Operational Definitions

Effectiveness

It refers to the extent to which, the breast crawling technique has achieved the desired outcome in third stage of labour among parturient mothers.

Breast crawling technique

The ability of the newborn to crawl towards mother's breasts when placed on the mother's chest immediately after the delivery and before the delivery of the placenta. The newborn finds the areola by him or herself which helps to initiate early suckling.

Outcome of Third stage of labour

Outcome of third stage of labour refers to total duration of third stage of labour (about 15-20 minutes) and blood loss (about 250-500ml) immediately after the delivery in both primi and multi parturient mother.

Parturient mother

A woman who is in the process of giving birth through normal spontaneous vaginal delivery.

Hypotheses

H_1: There will be significant difference on outcome of third stage of labour among parturient mothers in interventional and routine care group.

H_2: There will be significant correlation between the duration of third stage of labour and amount of blood loss in interventional and routine care group.

H_3: There will be significant association on outcome of third stage of labour among parturient mothers in interventional and routine care group with selected obstetric variables.

Materials and Methods

Research Approach and Design

Quantitative evaluative approach: True experimental research design, Post test only control group design was used to evaluate the effectiveness of breast crawling technique on outcome of third stage of labour among parturient mothers.

Independent Variable

The independent variable in the study was Breast crawling technique.

Dependent Variable

The dependent variable in the study was outcome of third stage of labour (Duration of labour and amount of blood loss).

Setting of the Study

The study was conducted in labour ward at PSG Hospitals, Peelamedu, Coimbatore.

Population and Sampling

The target population of the study was parturient mothers admitted in labour ward, PSG Hospitals, Coimbatore. The accessible population was parturient mothers who met inclusion and exclusion criteria.

Sampling Technique and Sample Size

By using Simple random sampling technique, the study participants were selected for the study in which table of random number method was adopted to allocate them in the interventional and routine care group. The sample size was calculated using power analysis. The calculated sample size was 80 and they were randomly grouped as 40 mothers in the interventional group and 40 in routine care group.

Sample Selection Criteria

Inclusion Criteria

Mothers

- Admitted for normal vaginal delivery.
- Willing to participate in the study.

Exclusion Criteria

Mothers

- Having any sudden complications during labour.
- Having any nipple abnormalities.
- Having a gestational score of <38 weeks.
- Delivering twin babies.
- Delivering sick newborn.

New-born

- Apgar score is less than 7 at 1 minute.

Instruments and Tools for Data Collection

Tool consists of three sections

Section A

Obstetric variables in which Age, Obstetrical score, Gestational age, Apgar score at 1 minute, previous knowledge of breast crawl, If yes, Source of information was included.

Section B

Modified latch breast feeding assessment tool, Mother's and newborn criteria was observed. The scoring was given based on observation by the investigator during the breast crawl. The scores were categorized as follows,

Table 1: Scoring Interpretation of the tool

Classification	Scores
Not able to initiate breast feeding through breast crawl.	4
Need assistance to initiate breast feeding through breast crawl.	10
Actively initiate breast feeding through breast crawl.	18

Section C: Observation tool was used to assess & measure outcome of third stage of labour

Table 2.1: Scoring Interpretation of the tool (Duration)

Category	Duration (in mins)	Score
Normal	<15	3
Moderate	15-30	2
Prolonged	>30	1

Table 2.2: Scoring Interpretation of the tool (Blood loss)

Category	Blood Loss (in ml)	Score
Mild	200-300	3
Moderate	301-400	2
Severe	401-500	1

Validity and Reliability of Tool: The content validity of the tool was obtained from experts of Obstetrics and gynecological department. Reliability of the tool was determined using Inter observer reliability method and it was 0.8, Good strength of agreement. Thus, the tool was found to be highly reliable and feasible to conduct the study.

Data Collection Procedure

The Data was collected from January 27.01.2020 to 07.03.2020 in labour ward, PSG Hospitals, Coimbatore. After getting the ethical clearance from IHEC (Institutional Human Ethical Committee) the permission was obtained from Dr. Ramalingam, Dean, P.S.G IMS&R and Hospitals, Dr. A. Jayasudha, Principal, P.S.G College of Nursing, Dr.Seetha panicker, H.O.D of Obstetrics & Gynaecology department and Dr. S.Ramesh, Neonatal Unit Incharge, P.S.G Hospitals. 80 parturient mothers were selected for the study. After selecting the study participants, consent was obtained from them. (Explained every step of consent form to the parturient mothers). The intervention was carried out for the interventional group parturient mothers along with the routine care with duration of 2 to 3 minutes. Observation of outcome of third stage of labour was recorded.

Results

The results of the study were categorized into 4 tables given below,

Table 3: Frequency and percentage distribution of study participants based on post test outcome of third stage of labour in interventional and routine care group

S. No	Groups	Outcome of third stage of Labour											
		Duration						BLOOD LOSS					
		Normal		Moderate		Prolonged		Mild		Moderate		Severe	
		f	%	f	%	f	%	f	%	f	%	f	%
1.	Interventional group (n=40)	40	100	0	-	0	-	34	85	6	15	0	-
2.	Routine care group (n=40)	0	-	40	100	0	-	0	-	35	87.5	5	12.5

Table 4. Comparison of post test outcome of third stage of labour among parturient mothers in interventional and routine care group using unpaired 't' test.

H_1: There will be a significant difference on outcome of third stage of labour among parturient mothers in interventional and routine care group.

Table 4: Post-test Outcome of Third Stage

Outcome of third stage of labour	Groups	Mean± Standard deviation	Unpaired 't' test	d.f	Table value
Duration	Interventional group (n=40)	6.2±1.18	31.76***	78	3.37
	Routine care group (n=40)	22.25±3.02			
Amount of blood loss	Interventional group (n=40)	253.05±30.49	14.89***		
	Routine care group (n=40)	346.65±27.79			

*** Highly Significant at $p<0.001$

Table 5. Correlation between duration of third stage of labour with amount of blood loss among parturient mothers in interventional and routine care group using Karl Pearson test.

H_2: There will be a significant correlation between the duration of third stage of labour and amount of blood loss in interventional and routine care group.

Table 5: Correlation of Stage Duration & Blood Loss

Groups	Outcome of third stage of labour	Mean± Standard deviation	'r' value
Interventional group (n=40)	Duration	6.2±1.18	0.238
	Amount of blood loss	253.05±30.49	
Routine care group (n=40)	Duration	22.25±3.02	-0.11
	Amount of blood loss	346.65±27.79	

Association between the post test outcome of third stage of labour (Duration & amount of blood loss) with the selected obstetric variables in the interventional and routine care group by using Chi square test.

The calculated chi square value was higher in interventional (6.77) and routine care group (7.22) than the table value (5.99) for the obstetric variable of gestational age with the post test amount of blood loss during third stage of labour in interventional and routine care group at the level of $p\leq0.05$. It reveals that there was a significant association between

the selected obstetric variables on outcome of third stage of labour in blood loss among parturient mothers in interventional and routine care group. Hence H_3 was retained.

Discussion

The data presented in the table 3 elicits the frequency and percentage distribution of study participants based on post test outcome of third stage of labour. In interventional group, all parturient mothers (100%) had a normal duration of third stage of labour and 34 (85%) had mild blood loss, 6 (15%) had moderate blood loss and no one had severe blood loss. In routine care group, all parturient mothers (100%) had a moderate duration of third stage of labour and 35 (87.5%) had moderate blood loss, 5 (12.5%) had severe blood loss and no one had mild blood loss.

The data presented in the table 4 reveals that the comparison between the interventional and routine care group by using unpaired 't' test. With regard to duration of labour, the post test mean and standard deviation was 6.2±1.18 for the interventional group and 22.25±3.02 for the routine care group. The post test mean and standard deviation was 253.05±30.49 for the interventional group and 346.65±27.79 for the routine care group for blood loss respectively. The calculated value of unpaired 't' test for duration of third stage of labour and amount of blood loss 31.76, 14.89 was greater than the table value 3.37 and it shows that the breast crawling technique was effective at $p<0.001$. It has been proven that the breast crawling technique was more effective on outcome of third stage of labour. Hence H_1 was retained .

The data presented in the table 5 reveals that the mean and standard deviation for duration of third stage of labour was 6.2±1.18 and amount of blood loss was 253.05±30.49 and there was a positive correlation (r =0.238) between duration of third stage of labour with the amount of blood loss in interventional group. On the other hand, the mean score and standard deviation on duration of third stage of labour was 22.25±3.02 and amount of blood loss was 346.65±27.79 and there was a negative correlation (r =-0.11) between duration of third stage of labour with the amount of blood loss among parturient mothers in routine care group. Therefore, there was a significant correlation between the duration of third stage of labour with amount of blood loss in interventional group. Hence H_2 was retained.

Thus, the above findings were consistent with a similar study which was conducted to evaluate the effectiveness of early initiation of breast feeding on outcome of third stage of labour among intra-natal mothers. The results revealed that the mean duration of third stage was 3.57±1.62, 10.27±2.92 in both the experimental and control group respectively. Similarly, the mean amount of blood loss was 198.33±25.74, 302.67±33.41 in both the experimental and control group. The calculated value of unpaired 't' test for duration of third stage of labour was 14.08 and amount of blood loss was 11.11 shows the effectiveness of the breast crawling technique at the level of $p<0.001$. Therefore, it was inferred that there is a positive effect of early initiation of breast feeding on duration of third stage and the amount of blood loss in the experimental group [6].

Conclusion

The result of the study showed that there was significant difference on the outcome of third stage of labour (Duration & amount of blood loss) among the interventional and routine care group. Therefore, the research hypotheses are retained. Thus, the breast crawling technique is more effective than the routine care. Hence, this intervention could be promoted as an Institution policy and can be implemented for the parturient mothers during the third stage of labour.

Nursing Implications: The present study has implications for nursing practice, nursing education, nursing administration and nursing research.

Nursing practice

- Nurses can implement the breast crawling technique on their routine clinical practice.
- The study can be emphasized for the parturient mothers to enhance early initiation of breast feeding.
- Mothers should be educated about the importance and benefits of breast crawling technique to manage the complications of third stage of labour.

Nursing Education

The nursing students should,

- Educate the mothers and community regarding early initiation of breast feeding by skin-to-skin contact and the management of complications of third stage of labour.
- Be trained to identify the complications of third stage of labour in both hospital and community settings.

Nursing Administration

The nurse administrator could,

- Motivate the students to do further research on breast crawl technique.
- Plan for continuing service education and in service education regarding breast crawl technique on the management of breast feeding difficulties and complications of third stage of labour.
- Encourage the nurses to use different, safe, cost effective measures to initiate breast feeding and reduce pain perception level while episiotomy suturing among parturient mothers.

Nursing Research

- This study motivates the maternal and child health nurses to apply research findings and can bring out new innovative and cost effective measures on reducing feeding problems.
- Extensive research can be conducted to create awareness to the hospitals and the community regarding the problems and its management by breast crawl technique.
- Disseminating the finding of the study through research reviews, publications in the journals etc.

These study findings can be used as the baseline data for future studies.

Limitations of the study

- Few mothers hesitated to expose themselves to the researcher but still they were convinced by adequate explanation and privacy.
- Generalization cannot be made as it was confirmed to small population.

Recommendations

- The similar study can be conducted in large group of population.
- A comparative study can be conducted to evaluate the effectiveness of breast crawling technique between male and female newborns.
- A comparative study can be conducted to evaluate the effectiveness of breast crawling technique on outcome of third stage of labour between primi and multi parturient mothers.
- A study can be done on effectiveness of breast crawling technique on maternal newborn bonding and psychological outcome of parturient mothers.
- A study can be done to assess the utilization of breast crawling technique by the neonatologists.

A structured teaching program can be done on LATCH technique among primi parturient mothers.

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