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Effect of foot reflex therapy on Post - operative pain and Lactation among post caesarean mothers

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Abstract

Background: Motherhood is a unique bio-psychosocial process that expands and transforms a woman's maternal role. The most important problems after caesarean section are pain and breastfeeding. Caesarean section, with an incidence of 20-25% in many rich countries, is a common abdominal surgery performed by women worldwide. According to a population survey conducted in Chennai, India, diagnoses of the disease have increased across the country, particularly in the economy, where the rate stands at 47% compared to 38% in India.

Objectives: To determine the effect of foot reflex therapy on level of pain and lactation among post caesarean mothers in experimental group. Design: True experimental design was used in the study. Sample type: Computer generated random sampling technique was used to select76 post caesarean among which 38 were assigned to experimental group and 38 were assigned to control group. Setting: it was carried out at postnatal ward Pondicherry Institute of Medical Sciences Hospital – Puducherry.

Tools: The post-caesarean pain was assessed using the Numerical pain rating scale and lactation was assessed with Modified Mother Infant Breastfeeding assessment tool.

Results: The findings of the study revealed that in experimental group, the level of pain perceived by the participants reduced from the second day onwards which was highly significant at $p<0.001$. Similarly, the level of lactation showed improvement from second day onwards which was significant at $p<0.001$.

Conclusion: This study concluded that foot reflexology should be used to treat postoperative pain and breastfeeding in mothers who have had surgery. Foot reflexology is a simple, inexpensive, drug-free procedure with no side effects. The results proved that the foot reflexology was effective in reducing post caesarean pain and improving the level of lactation among post-caesarean mothers.

Keywords: Foot Reflex Therapy, Post-caesarean Mother, Pain, Lactation.

Introduction

One of the most beautiful and unforgettable experiences for a woman is birth. It doesn't matter if the child is first, second or third. Every experience is unique and worth celebrating. The fetus adjusts throughout pregnancy and then leaves the womb into the world as a completely new person. True nobility and special talents are the qualities of mothers. Pregnancy and birth are important periods in a woman's life. This time can be very hopeful and exciting. This can also be a painful and scary time. Giving birth is considered a significant life event; for new parents, the postpartum period can be a difficult time both physically and emotionally. According to Union Ministry of Health and Family Welfare Survey 2018 - 2019statistics - the rate total caesarean birth is around 19 lakhs. A caesarean section is the operative procedure in which an incision is made the lower abdomen and pulls out the baby (one or more)from the womb. Common problem experienced by mothers after the caesarean section is pain and failure in early initiation of lactation. So, we need to treat this problem with the help of medication or with other remedies but still in obstetric nursing, only analgesics are used to reduce the post-caesarean pain and much emphasis is not given for any other alternative therapies. Pain is an uncomfortable experience in everyone’s life, it may be internal or external but severity is different for everyone. Postoperative pain management is one of the most difficult problems nurses have to deal with. Women who give birth by caesarean section feel more pain in the first few days after birth than women who give birth vaginally, and they experience discomfort for six months or more after birth. Postoperative care is unique because women must return to parenting with their babies immediately after surgery. Unfortunately, a mother's emotional stress can affect her ability to adequately care for her baby in the early stages of labour and can negatively impact relationships and interactions between mother and child. In addition, mothers' attitudes, especially towards breastfeeding, can be greatly affected by discomfort and anxiety. However, effective pain management is rarely encouraged early, thus reducing the risk ofthromboembolic disease, which can lead to serious complications in the postpartum period. Gynecologists' use of medication for postoperative pain is quite limited. Drug use is associated with many side effects, including nausea, vomiting, and delayed hospital discharge. Additionally, the medication used to treat pain can pass into breast milk, making the baby feel better. Therefore, methods used to manage postoperative pain must be effective, safe, and don’t interfere with the mother's ability to move and care for her baby. It should not affect newborns of older women. Therefore, it is necessary to use safe, simple and effective methods based on empirical data in the treatment of these specific conditions. Obstetricians should consider using no pharmacological pain management techniques to treat postoperative discomfort. These include therapeutic touch, herbal therapy, mind body exercises, massage, relaxing techniques and soothing music. This technique has been shown to be effective in reducing discomfort. The Foot reflex therapy is one of the best non

pharmacological methods in reducing the pain level and makes the mother to feel better. In foot reflex therapy, pressure is applied to the nerve endings and all the supportive organs so that it relaxes the muscles and nerve endings as well as improves the blood circulation. Once the pain is relieved mother feel relaxed and get adequate sleep, reduces depression and anxiety. Emergency cesarean and planned cesarean may have a negative impact on breastfeeding initiation, milk production and the baby's response compared to vaginal birth. The production and supply of milk is called lactation. Researchers found that women who had a cesarean were less likely to initiate breastfeeding or delay breastfeeding. Skin-to-skin contact has been suggested to improve the initiation, maintenance, and duration of breastfeeding. The time to initiate breastfeeding after cesarean section is limited due to separation between mother and baby, decreased breastfeeding capacity, decreased birth rate, and low milk production. Latch is the effective way of transferring the breast milk to the baby. It means the proper attachment of baby mouth with the mother's breast and heard swallowing sound, this is a good sign of "LATCH". According to the areas and reflex zones that affect the shape of the body of the foot, reflex zone stimulation is the practice of applying pressure to the feet with the thumbs and fingers while using oil, with the theory that this action causes changes in the body. Foot reflex therapy is the best effective technique to allow the mother to nurture the baby, body mind and spirit as well as improving the emotional bonding. Laura Thomas study showed that foot reflex therapy helps to improve the breast milk volume of 86% participants, who received in 10 therapeutic reflexology treatments. The Foot reflexology promotes the lactation, increase in milk production, makes the mother feel very comfortable and maintain good latch in breastfeeding.

Objectives of the study

To determine the effect of foot reflex therapy on level of pain and lactation among post caesarean mothers in experimental group.

Research Hypothesis

1. H1 - There is a significant difference in level of pain and lactation among post caesarean mothers in experimental and control group.
2. H2 - There is a significant association between level of pain and lactation among post caesarean mothers with selected socio demographic and clinical variables.

Study Design

True experimental Pre and Post intervention control group design was adopted.

Sampling technique

Computer generated random sampling technique was used to select 76 post caesarean among which 38 mothers were in experimental group and 38 mothers were in control group.

Setting

It was carried out at postnatal ward Pondicherry Institute of Medical Sciences Hospital –Puducherry.

Sampling Criteria

Inclusion Criteria

- Post caesarean mothers from post-operative day – I (After 12 hours) with intact foot skin, free from injury, infection and eczema who are willing to participate in the study.

Exclusion Criteria

- Mothers with severe postpartum complications.
- Mothers diagnosed with postpartum psychiatric disorders.
- Mothers whose baby is in NICU.

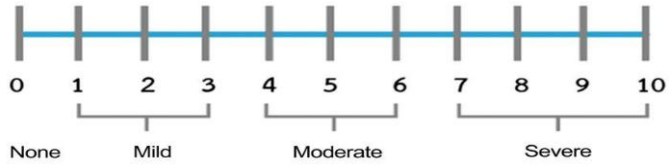
- COVID - 19 Positive mothers.

Tools

Section A: Socio Demographic Variables Demographic Variables in the study includes age, education, occupation, area of residence, type of family, and source of information.

Section B: Clinical Variables Clinical variables in the study include weeks of gestation, gender of baby, type of anesthesia and parity.

Section C: Numerical Pain scale



Scoring and Interpretation

1 – 3 - Mild pain

4 – 6 - Moderate Pain

7 – 10 - Severe Pain

Section D: MBA Scale (Modified Mother Infant Breastfeeding Assessment Tool)

MODIFIED MOTHER INFANT BREAST FEEDING ASSESSMENT TOOL			
SL.NO.	**CRITERIA**	**Yes (1)**	**No (0)**
1	Mother able to position and hold infant without Assistance		
2	Infant latches on to the breast without difficulty		
3	Infant nurses with a strong suck.		
4	Mother has nursed the infant 3-4 times		
5	Sleeps well 1½ - 2 hours after each feed.		
6	Baby passed urine at least 3-4 times		

Scoring:

- 0-4: Ineffective breast feeding
- >4 : Effective Breastfeeding

Foot Reflex Therapy:

- Total duration of Foot reflex therapy : 20minutes
- The Post Caesarean mothers were selected based on inclusion criteria.

Pre procedure

- Explain the procedure to the mother.
- Ask the mother to lie in a supine or semi sitting position with toes pointing up ward
- Clean both the foot with the help of clean cloth or tissue paper.
- Hold the left foot with both thumb finger and the remaining fingers supporting the dorsal area.
- Make the foot warm with using thumb walking method from toes to heel.
- Apply coconut oil for smoothening.
- Start the massage from toes to heel and go back to the big toe apply pressure in the points for head, neck, pituitary gland, cranial nerves, calf muscles and spinal nerves with the help of tool or fingers for 10 minutes.
- Repeat the procedure for right foot also.
- The same procedure has to repeated 12 hours interval for both the feet for 3days.

Post procedure

- Wash hands
- Record procedures with date, time and observations

Data collection process

Formal permission was obtained from concerned authorities before collecting data. Consent was obtained from the participants after explaining the nature & purpose of the study. Post caesarean mothers who fulfill the inclusion criteria were assigned to experimental &control group by computer generated block random numbers. Demographic and clinical variables of experimental & control group were filled by using predesigned interview schedule.

Experimental group: After 12 Hrs of caesarean section/surgery Pre assessment level of pain was done using numerical pain scale & lactation assessment done

using Modified MBA Scale. Following pre test foot reflex therapy along with routine care was given for 20 minutes in both legs twice a day at 12 hrs interval. Post assessment of level of pain using numerical pain scale (half an hour after the intervention) & lactation using Modified MBA Scale (12 hours after the intervention) was done. The same procedure repeated for 3 days.

Control group: After 12 Hrs of caesarean delivery, Pre assessment level of pain was done using numerical pain scale &lactation assessment done using Modified MBA Scale. Routine care was given. After 30minutes of routine care post level of pain was assessed with using numerical pain rating scale. Post level of lactation was assessed after 12 hours with Modified mother infant breast feeding assessment scale. The procedure was repeated for 3 days.

Data analysis

The data analyzed by using descriptive and inferential statistics.

- Demographic, clinical variables and level of post caesarean pain and lactation were analyzed in terms of frequency and percentage.
- Mann Whitney U test was used to compare the effect of foot reflexology on level of pain and lactation of experimental and control group.
- Fisher's exact test was used to find the association between post level of post caesarean pain and lactation with the demographic and clinical variables of the participants.

Table 1: Distribution of post caesarean mothers according to level of pain before and after foot reflexology in Experimental Group. n=38

Day	Observation	Pre test						Post test					
		Mild Pain		Moderate Pain		Severe Pain		Mild Pain		Moderate Pain		Severe Pain	
		F	%	f	%	f	%	F	%	f	%	f	%
Day 1	First observation	-	-	-	-	38	100.0	-	-	4	10.5	34	89.5
	Second observation	-	-	3	7.9	35	92.1	1	2.6	32	84.2	5	13.2
Day 2	Third observation	-	-	21	55.3	17	44.7	4	10.5	34	89.5	-	-
	Fourth observation	-	-	38	100.0	-	-	23	60.5	15	39.5	-	-
Day 3	Fifth observation	3	7.9	35	92.1	-	-	37	97.4	1	2.6	-	-
	Sixth observation	14	36.8	24	63.2	-	-	38	100.0	-	-	-	-

Table 2: Distribution of Post Caesarean mothers according to the level of pain before and after Routine care in Control Group. n=38

Day	observation	Pre test						Post test					
		Mild Pain		Moderate Pain		Severe Pain		Mild Pain		Moderate Pain		Severe Pain	
		F	%	f	%	F	%	f	%	f	%	f	%
Day 1	First observation	-	-	-	-	38	100.0	-	-	-	-	38	100.0
	Second observation	-	-	-	-	38	100.0	-	-	-	-	38	100.0
Day 2	Third observation	-	-	-	-	38	100	-	-	3	7.9	35	92.1
	Fourth observation	-	-	4	10.5	34	89.5	-	-	28	73.7	10	26.3
Day 3	Fifth observation	-	-	4	10.5	34	89.5	1	2.6	36	94.8	1	2.6
	Sixth observation	-	-	24	63.2	14	36.8	2	5.3	36	94.7	-	-

Figure 1: Distribution of Post Caesarean mothers according to the Lactation before and after foot reflexology in Experimental Group. n=38

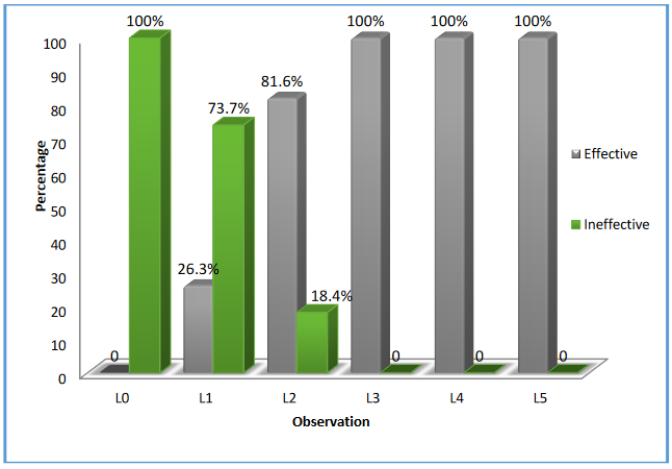


Figure 2: Distribution of Post Caesarean mothers according to the Lactation before and after routine care in Control Group. n=38

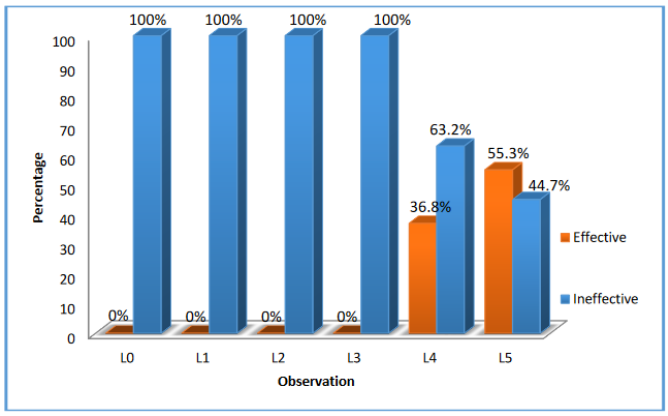


Table 3: Comparison of Post interventional level of pain among Post Caesarean mothers in experimental and control group. n=76

Day	Observation	Experimental Group (n=38)		Control Group (n=38)		Mann-Whitney U value	P value
		Post test Pain Score					
		Median	IQR	Median	IQR		
Day - 1	First	7	7– 7	8	8– 8	122.0	<0.001*
	Second	6	5– 6	8	7– 8	35.0	<0.001*
Day – 2	Third	4	4– 5	7	7– 7	1.5	<0.001*
	Fourth	3	3– 4	6	6– 7	10.5	<0.001*
Day -3	Fifth	2	2– 3	6	5– 6	29.0	<0.001*
	Sixth	2	1– 2	5	4– 5	12.0	<0.001*

* Highly Significant at p<0.001

Table 4: Comparison of Post test level of lactation among Post Caesarean mothers in experimental and control group. n=76

Day	Observation	Experimental Group (n=38)		Control Group (n=38)		Mann - Whitney U value	P value
		Post test Lactation Scores					
		Median	IQR	Median	IQR		
Day - 1	L1	4	3– 5	2	1.75 – 3.00	123.5	<0.001*
Day – 2	L2	5	5– 6	3	2.00 – 3.00	3.5	<0.001*
	L3	6	6– 6	3	3.00 – 4.00	0.000	<0.001*
Day – 3	L4	6	6– 6	4	3.00 – 5.00	0.000	<0.001*
	L5	6	6– 6	5	4.00 – 5.00	114.0	<0.001*

* – Highly Significant at p<0.001

Discussion

The study findings revealed that majority of post caesarean mothers 30(78.9%) in study group and 17(44.7%) in control group were in the age group of 26 – 30 years. 24(63.2%)participants in the study group were graduates whereas 24(63.2%) in control group had secondary education. 31(81.5%) mothers in study group and 29(76.3%) in control group were Hindus. Majority of post caesarean mothers 25(65.8%) in study group and 21(55.3%) in control group were from nuclear family. 20(52.6%) participants in study group were from urban area. 24(63.2%) participants in experimental group and 29(76.3%) in control group had monthly income between Rs.10001 to 30000/-. 18(47.4%) in study group and 22(57.9%) in control group were home makers. All the participants 38(100%) in experimental group and majority37 (97.4%) in control group were between 38 – 40 weeks of gestation. 25(65.8%) had male baby both in experimental group and in control group. The entire post caesarean mothers 38(100%) in experimental group and majority 37(97.4%) in control group had spinal anesthesia. 22(57.9%) both in experimental group and in control group participants had 2ndparity.There was a significant difference in level of pain before and after foot reflexology in experimental group at p<0.001 and level of lactation at p=0.005. There was no statistically significant association between level of post caesarean pain and lactation assessed on second day of delivery.

Limitation

- Due to COVID – 19 situations the study duration was extended.
- The study was conducted in a single private hospital in Puducherry therefore the results can be generalized only to the postnatal mothers in the hospital.

Recommendations

- Same study can be replicated with large sample in a different setting.
- Further study can be done to assess the effect Foot reflexology on other variables like anxiety, sleep.
- Comparative study can be done to assess the effect of foot reflexology with other alternative therapies

Conclusion

The present study assessed the effect of foot reflex therapy on post operative pain and lactation among post caesarean mothers. The study revealed that the foot reflex therapy was very effective to reducing the post caesarean pain and improving the lactation level.

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