Effect of Reflexology in Post Operative Pain Management among Women after Cesarean Section

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Abstract: *An Experimental study to determine the effectiveness of reflexology (foot massage) in post operative pain management among women after Cesarean section in Christian Medical College and Hospital, Vellore, Tamil Nadu. About 60 post operative women who met the inclusion criteria were randomly selected to Experimental and Control group. The women in Experimental group received reflexology for 20 minutes every 6 hours for the first 24 hours post operatively. The women in Control group received only the routine pain medication every 6 hours. Pain was assessed using numerical pain scale and observation checklist. The study findings revealed that the mean pain scores in the women of the Experimental group is 4, 1.9, 2.1, 2.3, 1.7 at 0, 6, 12, 18 and 24 hours post operatively. In Control group the mean pain scores are 5.1, 4, 5.2, 3.5, 3.8 at 0, 6, 12, 18 and 24 hours post operatively. The mean pain score of the women in Experimental group is 2.420 and women in Control group is 4.06 and there is significant reduction of pain score in women of Experimental group compared to the women in Control group with the p value of 0.0001. About 70% of women in Experimental group had no pain at 6, 12, 18, 24 hours post operatively and above 35% of women had mild pain in the Control group at 6, 12, 18, 24 hours post operatively. Reflexology has found to be an effective non - pharmacological pain management method among post operative cesarean section women.*

Keywords: Reflexology, post operative women, Cesarean section

1. Introduction

Caesarean sections have become almost the common operation in obstetrics and it can be the best life saving technique for both mother and baby. Labor pain is a normal physiological process so mothers prepare themselves adequately. But in case of Caesarean sections, pain is inevitably severe and slightly prolonged. The post operative pain may be acute, sharp, stabbing and shooting in nature, which usually disappears as the wound heals. Post operative pain can have a significant effect on patients' recovery (Apfelbaum, 2004).

Pain can be managed both pharmacologically and non – pharmacologically. Adequate pain management, increases mothers participation in baby care and early recovery. Reflexology is one of the non pharmacological methods of pain management and is been widely practiced in many countries. Reflexology is unique and simple method. Reflexology is a complementary therapy that has great potential for use by nurses in a multi-disciplinary pain management programme. Reflexology is safe, simple to learn, effective and non-invasive method of pain management. Reflexology is one of the few natural therapies to be adopted by health professionals and is being used in medical settings (Sue Ehinger, 2003).

Objectives of the study
1) To assess the postoperative pain in women who underwent caesarean section in the experimental and control group.
2) To find out the effectiveness of reflexology in reducing pain among women who underwent caesarean section.
3) To compare the pain perception of women who underwent caesarean section in the experimental group and control group.
4) To identify relationship between pain perception with selected demographic and clinical variables in the post operative caesarean women.

Hypothesis
There will be a significant reduction in post operative pain of women who undergo caesarean section by the use of reflexology in experimental group assessed by Numerical Pain Scale with level of significance 0.05 compared to control group.

Methodology
The research approach used was a quantitative research approach. The design is Experimental design. The study was conducted in the post natal wards of a tertiary care hospital. Sample consisted of 60 women who underwent Caesarean section and fulfilled the inclusion criteria. The samples were assigned to experimental and control group randomly.

Instruments
- *Numerical Pain Rating Scale:* – It is a Standardized free scale used for assessing the intensity of pain experienced by the patients.
- *Observation Checklist:* - Observation check list was used to assess non verbal expressions and activities of post caesarean women while they are in pain during first 24 hours of post operative period. Content validity of the instrument was established with the guidance of the experts. The score of Content validity is 0.89.

Data Collection Procedure
The women were selected within 2 hours post operatively. The arrival time of the women to the ward after surgery was taken as 0 hour. The pain assessment was done in the control group and experimental group at 0, 6, 12, 18, 24 hours post operatively. Experimental group received the intervention (foot reflexology) which was given for 15 to 20 minutes on both the legs at 0 hrs, 5hrs 30 minutes, 11hrs 30 minutes, 17hrs 30 minutes, 23hrs 30 minutes post operatively. The pain assessment was done by Numerical Pain Rating scale, Observation Check List periodically at various time periods.

2. Results and Discussion

Majority of women 83% in control and 76.7% in experimental group fall between the age group of 21 – 30 years. About 33.3% women in experimental group are literate who had education up to higher secondary school level. Majority of women in both the groups 73.2% in experimental group and 86.7% in control group are housewives. Since there is no statistical significant differences between both the groups, the groups are said to be homogenous.
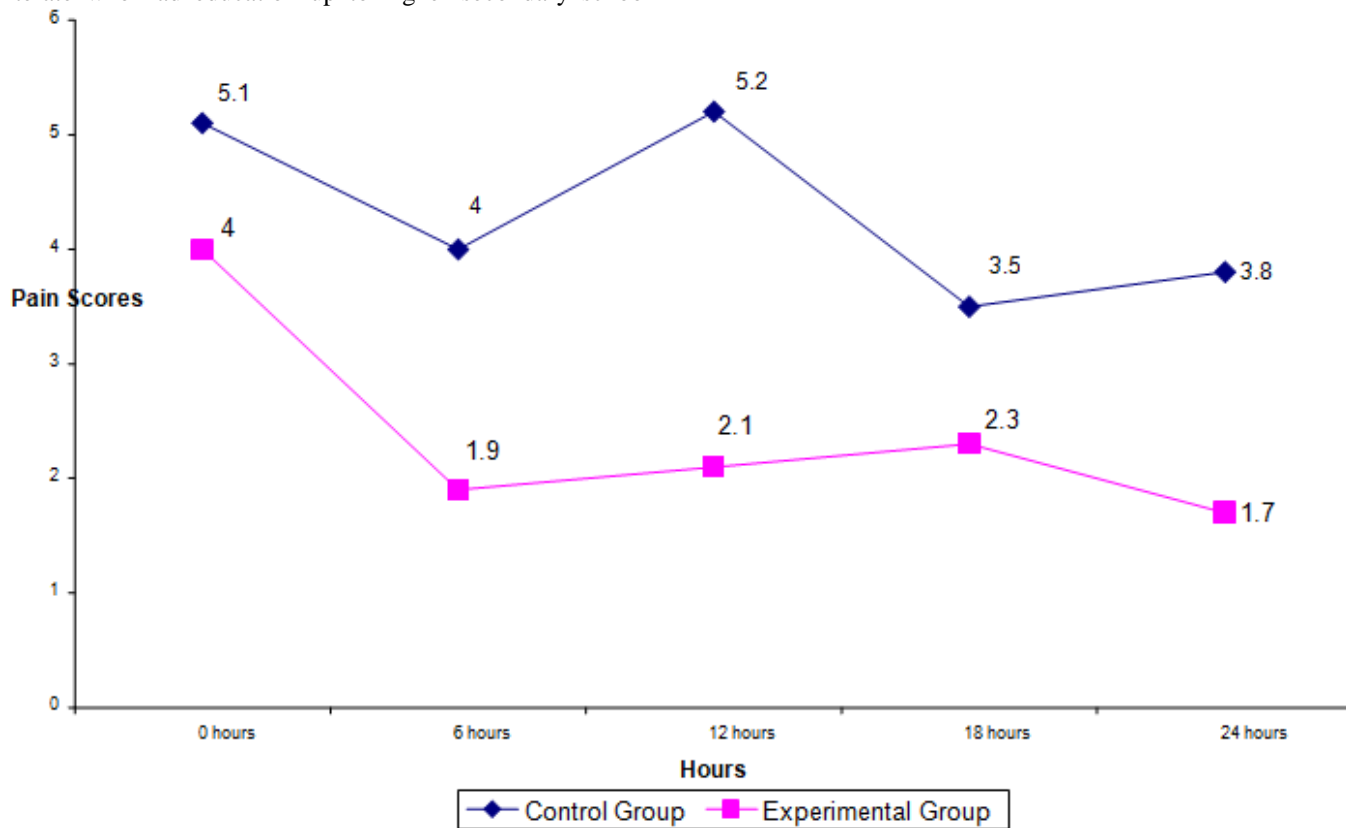

Figure 1: The Mean pain scores in experimental and control Group at specific time points of post operative period

The above figure gives the mean pain scores of the experimental and control groups. There is decrease in pain scores of the experimental group compared to the control group. At 0 hour the pain scores of the experimental group is less compared to the control group. At 24 hours the experimental group women show decrease in pain scores compared to the control group women. The women in the control group have experienced increase in pain at 12 hours post operatively with pain score of 5.2. The women in experimental group have experienced more pain at 0 hours post operatively with pain score of 4.00.

Table 1: Pain scores of the post caesarean women in Experimental and Control group using observation checklist

S. No	Category	0 Hrs				6 Hours				12 Hours				18 Hours				24 Hours			
		Exp.		Control		Exp.		Control		Exp.		Control		Exp.		Control		Exp.		Control	
		No.	%	No.	%	No	%	No.	%	No.	%	No.	%	No	%	No	%	No	%	No	%
1	Severe pain (>75%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Moderate pain (50-75%)	1	3.33	1	3.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Mild pain (Below 50%)	12	40	18	60	4	13.3	10	33.3	7	23.3	9	30	4	13.3	10	33.3	2	6.6	17	56.6
4	No pain (0%)	17	56.6	11	36.6	26	86.6	20	66.6	23	76.6	21	70	26	86.6	20	66.6	28	93.3	13	43.3

Table 1 show that none of the women had severe pain in both experimental and control group according to non – verbal behaviors. Moderate pain was felt by 3% of women in control and in experimental group at 0 hour. Above 70% of women in Experimental group had no pain at 6, 12, 18, 24 hours post operatively.

Table 2: Non-verbal behaviors of women based on Observation checklist

S. No	Observations	0 Hrs				6 Hours				12 Hours				18 Hours				24 Hours			
		Exp.		Control		Exp.		Control		Exp.		Control		Exp.		Control		Exp.		Control	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No	%	No	%
1	Grimace	13	43.3	17	56.7	2	6.7	6	20	6	20	6	20	4	13.3	8	26.7	1	3.3	11	36.7
3	Closes eyes tightly	4	13.3	5	16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Cries	-	-	3	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Closes first tightly	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Respiratory rate increases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

6	Guards abdomen	8	20.7	7	23.3	2	6.7	8	26.7	1	3.3	6	20	2	6.7	5	16.6	-	-	11	36.7
7	Makes incomprehensible Sound	6	20	5	16.7	-	-	-	-	1	3.3	-	-	-	-	-	-	-	-	1	3.3
8	Bites lips	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
9	Verbalizes pain	12	40	17	56.7	1	3.3	4	13.3	-	-	1	3.3	1	3.3	3	10	-	-	2	6.7
10	Looks Restless	1	3.3	1	3.3	-	-	-	-	-	-	1	3.3	-	-	-	-	-	-	-	-

Inference: The above table projects that the non verbal expression in both the groups are similar only at 0 hours. The Experimental group women shows less non verbal behaviors compared to the women in control group.

Table 3: Comparison of pain score (summary measure)* in Experimental and Control group

Variables	Control group (N=30)		Experimental group (N=30)		't' value	P value
	Mean	S.D	Mean	S.D		
Numerical pain Score	4.066	0.984	2.420	0.84	-6.960	0.0001***

*Foot note: Summary measure was computed by taking the pain scores of the women at various time periods.
***P = <0.0001

Inference

The mean pain score was calculated from the summary measures of numerical pain scores at different time periods (0, 6, 12, 18, 24 hours post operatively) in both Experimental and Control group. The above table projects a significant reduction of pain scores in Experimental group compared to the pain scores in the Control group with p value of 0.0001.

Table 4: Comparison of mean pain scores at 0 hour and 12 hours in Experimental group (Pretest and post test), (N=30)

Numerical score	Pre-test (0 hours)	Post-test (12 hours)	Paired 't' value	P value
Mean	4.00	2.10	3.49	0.002*

***P = < 0.050

Inference:
The mean pain scores at 0 hours and 12hours were calculated. A paired't test was done to find the effectiveness of the foot massage in Experimental group. The above table shows a significant reduction of pain scores at 12 hours post operatively compared to 0 hours of post operative period of women in Experimental group.

The above data says that there is a significant reduction in post operative pain with foot reflexology as a complementary therapy along with the routine pain medications in the experimental group. There is no significant relationship between the pain perception and the demographic and clinical variables. The above findings are supported by a study done by Deepshikha & Vibha (2016) that the level of pain was significantly less with a p value of <0.001 in the experimental group of post cesarean women compared to the control group. Swetha (2006) reported in her randomized control trial n 60 postoperative patients of general surgery that patient who received foot reflexology had significant pain reduction and the use of pain killers were 50% less in experimental group compared to the control group. Kunz. V.Kunz (2006) also mentioned in his study that there is less use of pain killers in the foot reflexology group than in patients who received the routine treatment.

3. Recommendation

Implication for nursing practice:
- The nursing personnel should know the importance of pain assessment and pain management.
- The nurse should be motivated to identify and manage pain effectively.
- Nurses should not be satisfied by managing pain with pharmacological method, rather should be sensitive to use non pharmacological pain management methods like reflexology.
- Nurses should be educated about reflexology, its technique and its importance in pain management.
- The massage can be taught to the relatives and to the patients to manage pain at home.
- Reflexology could be done not only for pain management but can be used to improve comfort and well being of the patients.
- Special skill development/ training programme, to learn and improve technique of foot massage could be reinforced among care providers to improve quality care.

4. Conclusion

The study findings support the hypothesis that there will be a significant reduction of pain scores in the experimental group compared with the pain scores of the control group by the use of reflexology. Nurses can use this art of therapeutic foot massage to reduce pain. It is cost effective, improves comfort, and enhances psychological and physical well being. Touch develops good interpersonal development between the patient and the care giver. Foot massage is perceived by the women soothing, relaxing and effective measures to decrease pain post operatively.

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