

EFFECT OF FOOT AND HAND MASSAGE ON RELIVING POST CESAREAN SECTION AFTER PAIN

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ABSTRACT

BACKGROUND: post cesarean section pain is the most complication affected mother. Hand and foot massages are very effective in decreasing pain and its consequence. **The aim:** of this study was to assess the effect of foot and hand massage on post cesarean section after pain. **Methodology:** **Design:** A quasi- experimental design was utilizing in this study. **Setting:** The study was conducted at obstetrics and gynecology hospitals (postnatal ward) of Al-Amery General Hospital Port-Said& Obstetrics and Gynecology Specialized Hospital Port-Said. **Subjects:** Mothers during early post cesarean section period during the second 6 hours (n=120) divided into two groups. "study group" and "control group". Four tools were used for data collection: Structured interview sheet for the woman's it includes two parts: general characteristics, &obstetrical history of women as previous cesarean section. , Numerical rating scale. , Modified McGill pain & Likert Scale. **Results.** The result revealed that there was no significant difference between the two groups concerning their levels of pain and anxiety before the massage ($P>0.05$). However, the levels of pain significantly decreased in the intervention group, immediately, 6hand 8 hours after the intervention ($P<0.001$). **Conclusion:** According to our results, Hand and foot massage was effective in lowering the level of post-cesarean pain. nurses can relieve the post CS pain by applying available massage technique as it is simple & non-invasive **Recommended** Further researches are advised where replication of the current study on a larger post CS women size and different settings for the purpose of better generalization.

Key words: After pain, Cesarean section, Massage

INTRODUCTION

Caesarean section (CS) is a life-saving intervention for women and newborns when complications occur. A Caesarean section is a surgical procedure in which incision is made through a mother's abdomen and uterus to deliver one or more babies, or rarely, to remove a dead fetus. A caesarean section is usually performed when a vaginal delivery would put the baby's or mother's life or health at risk, although in recent times it has been also performed upon request for childbirths that could otherwise have been natural. It has now become increasingly the procedure of choice in high risk pregnancies, to prevent perinatal morbidity and mortality (*Sandall, et al. 2018*).

Despite the global approach towards promoting physiological birth, cesarean birth is still prevalent around the world (22.5% of deliveries are by caesarean section). In Egypt, some studies have reported the rate of cesarean birth to be 51.8% (Al Rifai, 2017). The results of studies have shown that 79% of patients suffer from severe and moderate pain within 48 hours after operation. Post-cesarean pain can be influenced by several factors such as age, gender, surgical technique, complications during the procedure, the support of family and healthcare personnel, weight and gender of baby, social and cultural issues and previous experience of the procedure .

The main problems resulting from cesarean birth are postoperative pain. pain is "an unpleasant sensory and emotional experience associated with actual or potential tissue damage. It has negative maternal and neonatal impact such as disturb the early relationship between mothers and newborns as can delay mothers to get in touch with the newborns, reduce breast-feed effectively also may impair the mother's ability to optimally care for her infant in the immediate postpartum period (*Borges, et al. 2017*). Inadequate pain management in the postoperative period is associated with persistent pain, greater opioid use, delayed functional recovery, and increased postpartum depression. So timely and effective postoperative pain management is a key priority of cesarean delivery women. In addition to pain relief, restricted maternal mobility, rapid recovery to baseline functionality, and early discharge home, reduces the costs of treatment, and increases mother-infant interactions (Carvalho& Butwick, 2017(Kintu, et al.2019):).

foot and hand massage is the most common form of massage therapy MT. Since the highest concentration of pain receptors are in the hands and feet (each of the extremities has more than 7,000 nerve endings), foot and hand massage and neurons'

stimulation may be a good technique for assuaging pain and anxiety after cesarean section as it stimulates the nerve fibers to produce pain-relieving endorphins (*Kordi, et al.2015*) also, it reduces postoperative pain intensity, unpleasantness distress, sympathetic responses to postoperative pain, doses of analgesics, stress, swelling and improve blood circulation, sleep, promote relaxation, oxygen capacity of the blood & feelings of well-being (Younger, 2019).

The Significant of the study:

One of the problems for mothers in the post-cesarean section period is pain, which disturbs the early relationship between mothers and newborns; timely pain management prevents the side effects of pain, facilitates the recovery of patient, reduces the costs of treatment by minimizing or eliminating the mother's distress, and increases mother-infant interactions (*Abbaspoor, et al. 2014;Sujata, et al. 2014*). However, few studies have been performed on massage therapy and its impact on post cesarean pain. Considering the facts that safe and effective post-cesarean pain relief methods are of great importance, since the results can influence the early interactions of mothers with their infants, and the rate of cesarean in Egypt is higher than the international acceptable rates, So, this study was conducted to assess the effect of foot and hand massage as non-pharmacological pain relief measure on relieving post cesarean section after pain.

AIM OF STUDY:

To assess the effect of foot and hand massage on post cesarean section after pain

Research Hypotheses: There will be significant differences between the pre-test level and posttest of post cesarean section pain in the study group and there's no side effect on mother comparison with the control group.

SUBJECT AND METHOD

A) Research Design: A quasi-experimental research was conducted for this study.

AB) Study Setting: The study was conducted at obstetrics and gynecology hospitals (postnatal ward) of Al-Amery General Hospital Port-Said& Obstetrics and Gynecology Specialized Hospital Port-Said.

C) Sampling: The sample size was determined by using the following equation (**Brown & Hollander, 1977**):

$$Sample\ size\ (n) = \frac{P(1-P)}{D^2} Z^2$$

The calculated sample size is **100** women. Due to the expected non-participating rate (10%), the final sample size was **120** women divided into two groups 60 women in each one

Inclusion criteria of sample: The pregnant women whose age ranged from 20 to 35 years old., Previous parities. Elective caesarean delivery, Free from any pregnancy related complications, Woman with healthy baby. **Exclusion criteria** Mothers who has damaged tissues and skin on feet or hand Using any other complementary therapy.

D) Tools of Data Collection:

Tool (I): Arabic Structured interview schedule: *The questionnaire included two parts as the following:* **The First Part (I): general characteristics of the study sample which included (question 1-4):** This part was concerned with general characteristics of mothers including information about (personal data, name, age, education, occupation). **Part (II):** obstetrical history of women as previous cesarean section, indication of (C.S), experience of previous post cesarean section pain, effects of pain on recovery and mothering role.

Tool (II): Numerical rating scale, it is an assessment scale with fixed scale steps, a linear line with marks spaced (1) cm apart. In this scale, women were asked to choose between four words, ranging from 0 to 10 which were: '0' for no pain, '1-3' for mild pain, '4-6' for moderate pain, '7-10' for severe pain. This tool was used for intervention and control group. It is widely preferred by national and international investigators for its applicability and clarity in determining the pain intensity of mothers (**Pasero& McCaffery, 2005**).

Tool(III): Modified McGill pain questionnaire short form (SF-MPQ) (Dworkin, et al , 2009):

this scale was used by the researcher to assess pain characteristic. This tool is consisting of two parts: **Part (I)** sensory pain descriptors are including 11 words that measures sensory pain each as throbbing, stabbing, sharp, cramping, gnawing, hot-burning, aching, heavy, tender, splitting and shooting. **Part (II)** affective pain descriptors are consisting of words that measure the affective pain such as tiring, exhausting, sickening and fearful.

Ethical Considerations women were informed that they are allowed to choose to participate or not in the study and they have the right to withdraw from the study at any

time, The researcher clarifying the aim of the study to the mothers included all study sample, promote that confidentiality of the subject data was maintained assure maintaining anonymity, The proposal reviewed and approved by the faculty ethics committee, Oral consent was obtained from each mother participated in the study, tools of data collection didn't touch religious, cultural, moral issue and respecting the human rights &The research tools was not cause any harm or pain for participant patients.

Preparatory phase: The researcher had joined to a training course about hand and foot massage for five months from 1/1 to 20/5/2019. She attended two days weekly theoretical training three hours per sessions Review of the current, past local and international related literature and theoretical knowledge of various aspect of the study using books, articles, internet, periodicals and magazines. This review helped the researcher to be acquainted with magnitude and incidence of the problem and guided the researcher to prepare data collection tools.

A Valid & Reliable tools were used then pilot Study was conducted for 10% of the sample (12mothers) to evaluate the efficiency, validity, the relevance, clarity and of the tools used for data collection, Mothers included in the pilot study were excluded from the total sample as there is no modification in tools.

Field work: Collection of data covered a period of 13 months "from the first of 2018 to the end of 2019". Data collected during morning, 5 days/ week General Hospital Port-Said Sunday, Tuesday Thursday, meanwhile obstetrics and Gynaecology Specialized Hospital Port-Said Monday, Wednesday including all mother who had the previous inclusion criteria through using study tools by the researcher., Sampling started and expected to be completed until reach predetermined size, Approval of mother was obtained orally after explaining the purpose of the study.

Phase (1): implementation phase: Secondly, the researcher attended the hospitals from 9.00 a.m. to 1.00 p.m. five days-weeks. mother consent for participation was obtained after explaining the purpose of the study, and then the researcher started interviewing process for three-five mothers daily, 20-25 minutes for each mother, the interviewing sheet was utilize followed massage session at the end of session, completing the filling of sheets, the researcher reviewed every point in sheet to be sure that no points are missed., the researcher developed the intervention which included foot and hand massage.

Massage steps: the mother was placed on a comfortable and unconstrained position and the researcher, after washing her hands and cleaning the patient's feet and hands with a wet towel, Compression on the muscle was achieved by altering the direction in which the foot. Friction was used only on small areas and it was applied by pressing with small circular movements using the pad of the fingers. performed the massage intervention for 20 minutes on patient's extremities (5 minutes for each).

Phase (2): evaluation phase: The researcher measured pain for both group by numerical rating scale was used to determining the pain intensity of mothers before starting massage immediately after intervention and one,6,8 hour after intervention in the study group.

3- Administrative Design: An official approval with written letters clarifying the title, purpose and setting of the study was obtained from Dean of faculty of Nursing at Port Said University as approval for data collection to conduct this study to the above mentioned setting director.

4- Statistical design: The collected data were organized, revised, tabulated, and analyzed. Computer using statistical packages social science SPSS 20.0. The suitable statistical tests were used to determine whether there was a significant statistical differences between study variables or not. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, in addition to means and standard deviations for quantitative variables. Quantitative continuous data were compared using Student t-test in case of comparisons between two groups. Qualitative variables were compared using chi-square test.

RESULTS:

Overall, 120 women were enrolled in this study, five of whom were excluded due to unwillingness to continue participation in the study. Then, the participants were divided into two groups of experimental and control, each consisting of 60 mothers.

Table (1): Illustrates the socio-demographic characteristics of the studied women the table reveals that more than half of the participants (55%,56.7%)in the two groups ranged from 20 to 25 years old with medium level of qualifications, and more than two thirds were house wives. It is obviously there is not a significant statistically difference of mother's in the two group about demographic data related to age factor, qualification, and occupation ($p=0.5$).

Table (2): demonstrates comparison between the two studied groups according to measuring pain. It demonstrates that no sound expression with pain in majority of study group (73.3%) and in (46.7%), while 23.3% of the study group express pain by crying versus 43.4% in control group, only 3.3% of study group versus 10% in control group express their pain by screaming. Regarding facial expression to pain no facial expression, pressure on teeth, scowled face biting lips and cut of forehead in the study group Vs in the control group (71.7%, 13.3%, 6.7%, 8.3% & 0% Vs 41.4%, 21.7%, 10%, 25.5% & 1.7%) As for body movement expression toward pain the majority of study group (67.2%) walked, 10% idle the same proportion walking and idle, 8.6% change their position on the hand the control group no motion in 35% followed by idle & walking 28.6% and 23.2% respectively. Only 7.1% changing their position. The observed difference was highly statistically significant, where ($p < 0.001$).

Table (3): shows distribution of studied groups according to character of pain after the operation. It shows that all women (100%) in both groups describe pain immediately post CS as aching, 88.3% in study group Vs 83.3% in the control group describe it as heaviness while 70.0% in study group Vs 89.7% in the control group describe it as sharp. Their pain increases by defecation in both groups 93.4% in study group Vs 95% in control.

Table (4): Shows comparison between the two studied groups according to impact of pain after the operation. Concerning the impact of pain on women's ability to practice, there were strong significant differences between the two groups regarding ability for walking and their personal care, the observed difference was highly statistically significant, where ($p < 0.001$). That the hand and foot exercise improved their ability to apply their activities in the study group.

Table (5) displays comparison between the two studied groups according to assess the level of pain were assessed along six hours after the operation. It shows that there is a statistically significant difference between the two groups regarding the blood pressure measurement immediately before massage, at the six hours' session after operation. The observed difference was highly statistically significant, where ($p < 0.001$).

Table (1): Distribution of the studied sample according sociodemographic characteristics (N=120)

Sociodemographic items	Study (n = 60)		Control(n = 60)		χ^2	p
	No.	%	No.	%		
Age						
20-25	33	55.0	34	56.7	0.09 2	MC p= 0.955
26-30	20	33.3	20	33.3		
31-35	7	11.7	6	10.0		
Mean &SD	28.46 +5.75		28.89 + 5.58			
Education						
Not read and write	0	0.0	0	0.0	0.08 3	0.959
Read and write	10	16.7	9	15.0		
Secondary education	34	56.7	34	56.7		
University education and more	16	26.7	17	28.3		
Occupation						
House wife	42	70.0	45	75.0	0.37 6	0.540
Working	18	30.0	15	25.0		
Mean gestational age in weeks	39.2±.6		39.3±.7			

χ^2 : Chi square test MC: Monte Carlo p: p value for comparing between the studied groups

Table (2): Comparison between the two studied groups according to measuring pain (120)

Measuring pain	Study(n = 60)		Control(n = 60)		χ^2	p
	No.	%	No.	%		
Sound expression						
No sound expression	44	73.3	28	46.7	9.009*	MC p= 0.012*
Crying	14	23.3	26	43.4		
Screaming	2	3.3	6	10.0		
Facial expression						
No facial expression	43	71.7	25	41.7	12.355*	0.015*
Scowl	4	6.7	6	10.0		
Pressure on the teeth	8	13.3	13	21.7		
Lip biting	5	8.3	15	25.0		
Cut the forehead	0	0.0	1	1.7		
Body movement expression						
Walking	(n = 58)		(n = 56)		35.001*	MC p <0.00 1*
Idle	39	67.2	13	23.2		
Non motion	6	10.3	16	28.6		
Change position	2	3.4	20	35.7		
Walking + Change position	5	8.6	4	7.1		
	6	10.3	3	5.4		

χ^2 : Chi square test MC: Monte Carlo p: p value for comparing between the studied groups *: Statistically significant at $p \leq 0.05$

Table (3): Comparison between the two studied groups according to character of pain after the operation

	Study (n = 60)		Control (n = 60)		χ^2	P
	No.	%	No.	%		
Describe of pain immediately post CS						
Throbbing	10	16.7	11	18.3	0.058	0.810
Shooting	3	5.0	7	11.7	1.745	0.186
Stabbing	9	15.0	8	13.3	0.069	0.793
Sharp	42	70.0	52	86.7	4.910*	0.027*
Cramping	4	6.7	5	8.3	0.120	^{FE} p=1.00 0
Hottest and burning	9	15.0	6	10.0	0.686	0.408
Aching	60	100.0	60	100.0	–	–
Heaviness	53	88.3	50	83.3	0.617	0.432
Rigid	10	16.7	11	18.3	0.058	0.810
Cutting pain	11	18.3	9	15.0	0.240	0.624
Tired fatigued	6	10.0	5	8.3	0.100	0.752
Disgusting	4	6.7	4	6.7	0.0	^{FE} p=1.00 0
Scary	2	3.3	2	3.3	0.0	^{FE} p=1.00 0
Gnawing feeling	2	3.3	2	3.3	0.0	^{FE} p=1.00 0
Activities increases pain						
Setting	19	31.7	27	45.0	2.256	0.133
Standing	33	55.0	40	66.7	1.714	0.190
Walking	19	31.7	31	51.7	4.937*	0.026*
Defecation	59	93.4	57	95.0	1.034	^{FE} p=0.61 9
Carry the baby	14	23.3	29	48.3	8.155*	0.004*
Feed the baby	24	40.0	40	66.7	8.571*	0.003*
Coughing and sneezing	33	55.0	36	60.0	0.307	0.580
Volatility in bed	33	55.0	36	60.0	0.307	0.580
Urination	9	15.0	7	11.7	0.288	0.591

χ^2 : Chi square test FE: Fisher Exact
p: p value for comparing between the studied groups

Table (4): Comparison between the two studied groups according to Impact of pain after the operation

Impact of pain	Study (n = 60)						Control (n = 60)						χ^2	P
	Not affected		Affected to some extent		Are greatly influenced		Not affected		Affected to some extent		Are greatly influenced			
	No	%	No	%	No	%	No	%	No	%	No	%		
Ability to feed your baby in early hours after labor	7	11.7	12	20.0	41	68.3	3	5.0	9	15.0	48	80.0	2.579	0.275
Ability for sleep and rest	5	8.3	18	30.0	37	61.7	8	13.3	17	28.3	35	58.3	0.776	0.678
Ability for walking	3	5.0	56	93.3	1	1.7	4	6.7	43	71.7	13	21.7	12.931*	MC _p =0.001*
Personal care	10	16.7	50	83.3	0	0.0	5	8.3	47	78.3	8	13.3	10.272*	MC _p =0.005*

χ^2 : Chi square test
groups

MC: Monte Carlo p: p value for comparing between the studied

*: Statistically significant at $p \leq 0.05$

Table (5): Comparison between the two studied groups according to the level of pain (120)

	Study (n = 60)								Control (n = 60)								χ^2	p
	No Pain		Mild Pain		Moderate Pain		Severe Pain		No Pain		Mild Pain		Moderate Pain		Severe Pain			
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%		
6hours after operation																		
Immediate before massage	27	45.0	27	45.0	6	10.0	0	0.0	45	75.0	13	21.7	2	3.3	0	0.0	11.271*	0.003*
After massage immediately	22	36.7	8	13.3	14	23.3	16	26.7	46	76.7	2	3.3	7	11.7	5	8.3	20.166*	<0.01*
One hour after massage	0	0.0	31	51.7	10	16.7	19	31.7	0	0.0	36	60.0	12	20.0	12	20.0	2.136	0.344
Fr (p₀)	30.212* (<0.001*)								63.792* (<0.001*)									
8 hours after operation																		
Immediate before massage	0	0.0	12	20.0	48	80.0	0	0.0	0	0.0	9	15.0	51	85.0	0	0.0	0.519	0.471
After massage immediately	0	0.0	8	13.3	52	86.7	0	0.0	0	0.0	2	3.3	58	96.7	0	0.0	3.927*	0.048*
One hour after massage	0	0.0	9	15.0	51	85.0	0	0.0	0	0.0	8	13.3	52	86.7	0	0.0	0.069	0.793
Fr (p₀)	2.600 (0.273)								9.556* (0.008*)									
10 hours after operation																		
Immediate before massage	0	0.0	21	35.0	39	65.0	0	0.0	0	0.0	25	41.7	35	58.3	0	0.0	0.564	0.453
After massage immediately	0	0.0	39	65.0	21	35.0	0	0.0	0	0.0	34	56.7	26	43.3	0	0.0	0.874	0.350
One hour after massage	0	0.0	27	45.0	33	55.0	0	0.0	0	0.0	23	38.3	37	61.7	0	0.0	0.549	0.459
Fr (p₀)	11.455* (0.003*)								4.578 (0.101)									

χ^2 : Chi square test MC: Monte Carlo Fr: Friedman test p: p value for comparing between the studied groups p₀: p value for comparing between the studied periods

*: Statistically significant at $p \leq 0.05$

DISCUSSION:

pain is the most common CS complication. Generally, between 50% and 70% of mothers ' experience pain post-CS (*Ghana et al., 2017*). Almost all of the present study's participants experienced pain after their previous cesarean sections. More than two thirds of them described it as a severe type and analgesics relieved it to some extent. That pain lasted for several days.in same line with us *Landau, R., Bollag, L., & Ortner, C. (2013)* conducted a prospective longitudinal study to describe chronic pain after childbirth. However, in the study by *Jin et al., (2016)*, reported that patients with low levels of pain may be pain-free at one measurement and may experience pain at the next measurement, showing the fluctuation of pain.

The obtained outcomes of the current study approved that foot and hand massage was very effective in reducing pain after cesarean section. Massage treatment appears to modulate central nervous system neurotransmitters and, as a result, reduce pain, however the exact mechanism of action is unknown (*Kim, J. H., Dougherty, P. M., & Abdi, S. 2015*). The findings of the current study are consistent with the results of studies carried out by *Kordi, et al.. (2015)* reported that twenty minutes of foot and hand massage significantly reduced post-cesarean pain within the first 24 hours in Turkish women. As in the study group, ninety minutes following the interference a 2-point reduction in the mean score of pain was observed, while in the control group the average pain score had slightly increased. The pain assessment scale in Kordi, study was 20 cm, while in the present study we employed a 100 mm scale. In the present study, the mean pain score in the massage group was reduced by 30 points, but in the control group it decreased by less points. This difference might be due to the amount and type of analgesia, as well as the study environment

Additionally, Sun, & Pan., (2019). Who assessed persistent pain after cesarean delivery. assessed the impact of massage on level of pain and anxiety in cardiac surgical patients, it was found that pain and anxiety scores had significantly decreased in patients receiving a 20-minute massage The results of these studies were in line with ours. *Basyouni, Gohar, & Zaied, (2018).* conducted an experimental at the postnatal cesarean section ward of El-Shatby Maternity University Hospital in Alexandria Governorate, Egypt for determining the effect of Effect of Foot Reflexology on Post-Cesarean Pain. It was observed that foot reflexology can be a cost effective independent nursing intervention and a new useful safe method that can be used to decrease post-cesarean pain which in turn will improve the quality of women's post-cesarean experience. Thus, it can be encouraged as a beneficial non-medical approach in obstetric practice. Opposite to our finding Hulme et al. (1999) reported that massage therapy did not cause any significant differences in the pain experienced by the two groups ($P=0.371$). This result was not in agreement with ours, since Hulme et al. employed a retrospective approach for pain measurement, while we measured pain prospectively.

Assessing pain in relation to childbirth is one of the most important nurse ' tasks. However, the results of the current study depended upon the evaluation of post-cesarean pain intensity using and affective and sensory pain verbal word descriptors (JBOM) as

previously discussed. In accordance with that, a patient's verbal report is considered to be the single most reliable indicator of how much pain the patient is experiencing. Whereas, a considerable proportion of the study sample who described their pain as tearing before massage decreased dramatically to a very small proportion after intervention. Also, none of those who had cutting, burning & pricking, sharp & pricking, cutting & burning pain before reflexology reported the same pain after such application. Also, when post cesarean pain intensity was assessed among the study group before and after foot reflexology by evaluating their affective responses to such pain, it was rewarding to notice a sharp decrease in terrifying & dreadful, torturing & dreadful sensory responses. The pain rating index rank as measured by JPOMS (sensory & affective part) in the present study supported the previous results.

the results of the current study revealed that immediately and one hour after application, an outstanding decline in the intensity of post-cesarean pain was monitored as measured by CPPRS. This was obviously demonstrated among the experimental group before and after application. Whereas, a considerable proportion of the study sample that were in tense body posture, very restless, constantly frowning and who were crying before massage, decreased dramatically to a very small proportion after intervention. The current finding is relatively similar to the study of Similar finding was also reported by other studies; *Abdel-Aziz (2014)* & *Basyouni, (2018)* who showed that the mean score of pain intensity sharply decline in the intervention group after twenty minutes of applying reflexology weighed against the control group who received routine care only. On the other hand, incongruent of this study results; Jong (2012) in Holland didn't support current study results. Where Jong aimed to determine the effects of 'M' technique manipulation on postoperative infants' levels of pain and distress, after major craniofacial surgery. It was found that the results of the study do not support a benefit of 'M' technique also, *Maryam (2016)* when comparing the results before and after foot reflexology on chronic back pain among nurses; no difference was found in the emotional aspect. These differences probably because of different research setting.

Concerning is the impact of pain on women's ability to practice, there were strong significant differences between the two groups regarding ability for walking and their personal care, and this explains that the hand and foot exercise improved their ability to apply their activities, from the researcher's point of view; exercises improve the blood circulation and reduces the sensation of pain. Massaging the feet and hands stimulates

the mechanoreceptors that activate the "no painful" nerve fibers, preventing pain transmission from reaching consciousness (Harris, 2013). Also, in 2015, Kordi et al., illustrated that post-cesarean pain relief with no adverse effects on mothers and babies is of utmost importance, since mothers have to breastfeed and take care of their infants immediately after delivery. Whereas pain and side effects of analgesics may impair the mother's ability to optimally care for her infant, which may adversely affect the early mother and infant interactions and lactation process.

Finally, because women must immediately nurse and care for their newborns following birth, post-cesarean pain treatment with no harmful effects on mothers and babies is critical. Whereas analgesic discomfort and side effects may impede the mother's capacity to provide optimal care for her child, thereby impacting early mother-infant relations and the breastfeeding process. Furthermore, the present finding agrees with the study of Varghese. (2014). who noticed a statistically meaningful distinction between pain intensity scores before and after foot reflexology which means that the researchers' hypothesis was conservative; There will be significant differences between the pre-test level and posttest of post cesarean section pain among study group and there's no side effect on mother compared to the control group.

CONCLUSION:

Hand and foot massage was effective in lowering the level of post-cesarean pain. nurses can relieve the post CS pain by applying available massage technique as it is simple & non-invasive.

RECOMMENDATIONS:

Hand and foot massage should be advocated as a non-pharmacological approach for management of post-cesarean pain ,Hand and foot massage should be recommended in hospital protocols for management of post-cesarean pain. , Training program on hand and foot massage for obstetric nurses to utilize it for obstetric indications, as it is noninvasive, simple, & efficient and easy to practice Further researches are advised where replication of the current study on a larger post CS women size and different settings for the purpose of better generalization.

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