



Article

FOOT MASSAGE WITH LAVENDER ESSENTIAL OIL IN REDUCING THE PAIN OF POST-SECTIO CAESAREA PATIENTS

Mei Lestari Ika Widyyati¹, Atika Jatimi¹, Mabruroh¹

¹Nursing Faculty, Universitas Nazhatut Thullab Al-Muafa Sampang

SUBMISSION TRACK

Received: February 09, 2024
Final Revision: February 25, 2024
Available Online: March 01, 2024

KEYWORDS

Foot Massage, Pain, Sectio Caesarea

CORRESPONDENCE

Phone: 087750777062
E-mail: meilestari118@gmail.com

ABSTRACT

Background: One of the efforts to reduce maternal and child morbidity and mortality is to provide quality nursing care before, during and after delivery. The delivery process sometimes cannot run properly and the fetus cannot be born normally, so sectio caesarea is needed. Post sectio caesarea patients will feel pain in the incision area due to the surgical process on the abdominal wall and uterine wall. Post SC pain is caused by the surgical process on the abdominal wall and uterine wall that does not go away in one day with mild to severe pain intensity. Pain usually occurs 12 to 36 hours after surgery, and subsides on the third day. **Objective:** The purpose of this study was to determine the effect of giving foot massage therapy using lavender aromatherapy on the intensity of pain in post sectio caesarea mothers. **Methods:** This research is a quantitative research with Quasy Experiment method with one group pre-test and post-test design. The population in this study were all patients who underwent sectio caesarea surgery from April Until May 2022 with a total of 40 patients with probability sampling technique obtained 36 respondents. The instrument used is the Numeric Rating Scale (NRS). Data analysis using Wilcoxon Test (Signed Rank Test). **Results:** The results showed that before the foot massage was performed the average score obtained was 2.50. After doing a foot massage for 20 minutes the average score obtained was 1.81. With a decrease in the pain scale from 1-3 and the p value = 0.000, so that ($p < \alpha$). **Conclusion:** It can be concluded that there is an effect of foot massage therapy using lavender aromatherapy on the pain intensity of post sectio caesarea mothers.

I. INTRODUCTION

One effort to reduce the morbidity and mortality rates of patients and children is by providing quality nursing care before delivery, during delivery, and after delivery. Sometimes the labor process cannot proceed properly and the fetus cannot be born normally, so a cesarean section (SC) is required. This action is the main choice for medical personnel to save the mother and fetus. The Sectio Caesarea (SC) delivery process is carried

out by making an incision in the pregnant mother's stomach and uterus to help the baby exit the uterus. Patients who undergo delivery using the SC method usually feel discomfort, namely pain originating from the abdominal incision (Reeder, 2011 in Masadah, et al. 2020).

According to the World Health Organization (WHO) 2015, cesarean section operations in developing countries increase by 5-15% for every 1,000 births in the world. Indonesia has a

cesarean section incidence rate of around 17% (BKKBN, 2017).

Based on the results of Basic Health Research (RISKESDAS) in 2018 the incidence of cesarean section deliveries in Indonesia was 17.6% of a total of 78,736 births, the highest number was in the DKI Jakarta area at 31.3% and the lowest was in Papua at 6.7% (Indonesian Ministry of Health, 2019). Meanwhile, the incidence of cesarean section deliveries in East Java province in 2017 was 78.6% (Directorate General of Public Health, Indonesian Ministry of Health). Based on RISKESDAS data in 2018 in East Java Province, the trend for SC birth rates was 95.3% (RISKESDAS, 2018). Based on SIMRS data for the last 6 months at the Sukmawijaya Main Clinic, 92 patients underwent SC surgery (SIMRS, 2021). From this data, almost all patients experience pain 2-3 hours after the operation is completed even though the patient is under the influence of analgesics (SIMRS, 2021).

Post-SC pain usually appears 2-3 hours after the labor process is complete. This is due to the influence of anesthesia during delivery. Post-SC pain is caused by the surgical process on the abdominal wall and uterine wall which does not disappear in one day with mild to severe pain intensity. Pain usually occurs 12 to 36 hours after surgery, and decreases by the third day.

Post SC pain will have impacts such as limited mobility, bonding attachment (bonds of affection) is disturbed/not fulfilled, Activity of daily Living (ADL) is disturbed in patients which results in reduced baby nutrition due to delayed provision of breast milk (ASI) from the start, in addition to It also affects Early Initiation of Breastfeeding (IMD) which will affect the survival of babies born by CS. Therefore, there is a need for management that can reduce complications and improve the quality of post partum mothers through nursing

care (Jacobs, 2011 in Sari, D. N., et al, 2020).

It is very important for the post-operative nursing care process to be carried out as early as possible and comprehensively to overcome nursing problems. Management for dealing with pain can be provided pharmacologically or non-pharmacologically, such as massage. One massage action that can be performed is Foot Massage. Foot Massage is carried out systematically using manual manipulation techniques, such as rubbing, squeezing, or rotating soft tissue (for example, muscles, ligaments, tendons, and fascia) so as to increase the patient's range of motion, reduce the pain threshold, relax muscles, and increase blood circulation. A gentle massage on the feet can increase blood flow to vital organs, provide oxygen and nutrients to various organs and body tissues. If a part of the body is injured, then foot massage can help repair the injured tissue and make our body more relaxed and comfortable.

Based on the results of research conducted by Dewi Nurlaela Sari and Aay Rumhaeni (2020) which states that foot massage given for 20 minutes for 2 days can reduce the scale of pain felt by patients with caesarean section deliveries. Apart from foot massage, one of the therapies that is effective in reducing pain is essential oils, which is a therapeutic action using essential oils which is useful for improving physical and psychological conditions so that they become better. In this study, foot massage therapy was carried out using lavender essential oil which is useful for improving physical and psychological conditions. Physically, it is good to use to reduce pain, while psychologically it can have a calming effect and relax the mind, because absorption of essential oils occurs through the skin and then signals are sent to improve mood by promoting the release of neurotransmitters including

encephalin, endorphin, and serotonin (Rini, 2020).

II. METHODS

This research uses a Quasy Experimental design with a research design using one group pre-test and post-test design. The subject group was observed for their pain scale before the intervention was carried out, then observed again after the intervention was given. The intervention was carried out by providing a foot massage using lavender essential oil for 20 minutes, which was carried out once, for 10 minutes each time. The number of samples was 36 group samples using Probability Sampling technique with Simple Random Sampling with inclusion criteria: Caesarean section patients 12-24 hours Post Operation, ASA (American Society of Anesthesiologists) physical status including ASA I (surgical patients without systemic disease/healthy patients) and ASA II (patients with mild systemic diseases such as essential hypertension, SBP 140-159 mmHg, SBP 90-99 mmHg and mild diabetes mellitus), can communicate well and are willing to be respondents.

III. RESULT

General patient data shows most of the patients were in the age range 26-35 years (44.4%). The occupation of most patients was housewives as many as 15 patients (41.7%). The education level of the majority of patients had a high school education, namely 12 patients (33.3%). The physical status of most of the patients was ASA status 1 as many as 26 patients (72.2%). Based on Parity, the majority were Primipara, 26 patients (72.2%). Apart from that, patient data is also supported by special data as in the following table:

Table 1. Frequency Distribution of Pain Intensity of Post SC Patients before intervention

Pain Scale	Pre Test		Post Test	
	F	%	F	%
No Pain	0	0	0	0
Mild Pain	0	0	10	27,8
Moderate Pain	18	50	23	63,9
Severe Pain	18	50	3	8,3
Very Severe Pain	0	0	0	0
Total	36	100	36	100
Mean ±SD	2,50±507		1,81±577	
Wilcoxon Test	<i>P-value = 0,000</i>		<i>P-value = 0,000</i>	

The research results based on the Wilcoxon statistical test show that the sig. (2-tailed) 0.00 shells from alpha 0.05 ($p < \alpha$) then H1 is accepted and H0 is rejected, which means there is an effect of giving foot massage therapy using lavender essential oil on the pain intensity of post-cesarean section patients. As in the following table :

Table 2. Wilcoxon Signed Ranks Test

		N	Mean Rank	Sum of Ranks
Pain before and pain after the procedure	Negative Ranks	25 ^a	13.00	325.00
	Positive Ranks	0 ^b	.00	.00
	Ties	11 ^c		
	Total	36		

Table 3. Statistic Test

Pain before and pain after the procedure	
Z	-5.000 ^a
Asymp. Sig. (2-tailed)	.000

IV. DISCUSSION

Pain Intensity of Post-Sectio Caesarea Patients Before Being Given Foot Massage Therapy Using Lavender Essential Oil

Based on the research results in Table 5.6, it is known that before the intervention, the pain scale felt by the patient was moderate and severe. Of the 36 patients, half of them, namely 18 patients (50%) experienced moderate pain, 5 patients with a pain scale of 5, and 13 patients with a pain scale of 6. Meanwhile, the other half, namely 18 patients (50%) experienced severe pain, and 14 patients with a pain scale. 7 and 4 patients with a pain scale of 8.

Pain is an unpleasant sensory and emotional experience associated with actual tissue damage the threat of tissue damage, or a sensation that is reflected in tissue damage (Pramono, 2017). Labor pain is a patient's subjective experience of the physical sensations associated with uterine contractions, cervical dilation and effacement, and fetal descent during labor. Based on the duration of time, this acute pain usually has a sudden onset, for example, after trauma or surgery, and may accompany anxiety or emotional distress. Acute pain indicates that damage or injury has occurred. Acute pain usually decreases as healing occurs (Fatmawati & Fauziah 2018).

The reaction to pain is a very individual response. This reaction depends on personality, emotional condition as well the patient's level of understanding, cultural background, family and education, and previous experience. Anxiety sensitivity in labor pain has a significant relationship with

sensory and affective affect in labor pain. (Whitburn, Jones, Davey, & Small, 2017).

The mechanism of pain occurs through four processes transduction, transmission, modulation, and perception. The role of nociceptors begins as recipients of pain impulses, which are transmitted from the periphery to the central nervous system (CNS). Post-operative pain (NPO) is a complex reaction of the body to tissue damage (from skin incisions to damage caused by the surgical process), pulling or stretching of organs in the body, and disease (Andika, 2020). Post-operative patients often experience pain due to tissue discontinuity or surgical wounds resulting from surgical incisions as well as due to the position maintained during the post-operative procedure itself.

This pain is very annoying, uncomfortable, troublesome, so that you cannot carry out some activities properly, and interferes with rest time. Each individual has a different level of pain and the response to the pain they feel is different, so exploration needs to be done to determine the value of the pain. The difference in the pain scale perceived by a person is caused by the individual's ability to respond and perceive the pain they are experiencing. In this study, there were differences in pain reduction for each patient. This is because individuals have multidimensional characteristics, Individual responses in overcoming problems that occur vary (Masadah, Cembun & Sulaeman, R., 2020).

Perceptions vary due to differences in age, many experience caesarean section pain on a moderate to severe pain scale because the patient's age is between 26-35 years. At this age, it is considered early adulthood so it is more likely to

perceive pain. Meanwhile, the experience of previous operations was due to trauma to the caesarean section scar so that patients experienced more pain than previous operations (Muliani R, Rumhaeni A & Nurlaelasari D, 2019).

Pain Intensity of Post Sectio Caesarea Patients After Being Given Foot Massage Therapy Using Lavender Essential Oil

Based on the research results in table 5.7, it is known that after the intervention, of the 36 patients, 10 patients (27.8%) experienced mild pain, 23 patients (63.9%) experienced moderate pain, and 3 patients (8.3%) experienced severe pain scale. Most respondents experienced a decrease in pain scale of 1-3 after being given foot massage therapy using lavender essential oil.

Foot massage is a massage that focuses on the foot area as a whole. This massage is done to relax tense leg muscles after exercise or other activities. Foot massage is part of Massage therapy (MT) which is a technique that can increase the movement of several structures in both muscles by applying mechanical force to the tissue. Massage can be done increases muscle relaxation to reduce stress, anxiety levels, pain and helps us to improve sleep quality with speed recovery. Foot Massage describes one of the most common methods in complementary therapy (Afianti & Mardhiyah, 2017). Foot massage can be beneficial physically and mentally emotionally (Setyawati, Ibrahim, & Mulyati, 2016). The foot massage technique will be effective if done with a duration of 5-20 minutes with a frequency

of 1 to 2 times (Rumhaeni A & Nurlaelasari D, 2020).

Aromatherapy is therapy that uses essential oils or pure oil extracts to help improve or maintain health, raise the spirit, refresh and soothe the body and soul (Astuti, 2015). Essential oils can be combined with base oils which can be inhaled and massaged onto intact skin (Herlyssa, 2018). Providing foot massage therapy using lavender essential oil is an effective technique for reducing pain, because it relaxes tense muscles and causes relaxation. Foot massage therapy can also strengthen the relationship between nurses and patients, patients feel cared for and well cared for, thereby creating improved health and faster healing.

The Effect of Foot Massage Therapy Using Lavender Essential Oil on the Pain Intensity of Post Sectio Caesarea Patients

Based on the research results in table 5.8, after carrying out the Wilcoxon Rank Test statistical test, it is known that after administration foot massage therapy for 36 respondents obtained a mean value of 1.81, SD 0.577, minimum-maximum 1-3, and p value less than alpha 0.05 ($p < \alpha$) so that there is an effect of giving foot massage therapy using lavender essential oil on pain intensity in post caesarean section patients at the Sukmawijaya Main Clinic, Sampang.

Foot massage using lavender essential oil done once for 10 minutes can reduce the scale of pain felt by respondents. Gentle massage will help patients feel fresher, relaxed and comfortable. This happens because massage stimulates the body to release endorphin compounds which are natural

pain relievers. The pressure applied depends on the patient's comfort level, which is expected to change the intensity of the pain felt (Verin & Monica, 2015). Lavender essential oil is a non-pharmacological method that is useful for reducing pain, relaxing the mind, reducing tension and anxiety and providing calm when the patient is in labor (Hetia, 2017).

Foot massage is a non-pharmacological and non-invasive method, without high costs and does not require excessive equipment. Foot massage helps patients overcome pain and anxiety and improves the patient's quality of life. This is in accordance with research conducted by Rizki Muliani, Aay Rumhaeni & Dewi Nurlaelasari (2019) at RS. AMC Cileunyi Bandung, it is known that after doing it for 20 minutes for 2 days, the post test was measured and analyzed using the Wilcoxon test, the results showed that more than half of the post-SC patients experienced moderate pain on a scale of 6, after giving foot massage therapy they had a mild level of pain on a scale of 3, so that foot massage therapy influenced the reduction of the pain scale in post-caesarean section surgery patients at the hospital.

Lavender flowers are most often used as essential oil because of their distinctive fragrance. The aroma of this flower is believed to help improve mood and calm. Lavender flowers can also help reduce stress, anxiety and mild pain. Based on the discussion regarding research results from previous researchers and researchers, a solution is needed to improve the combination of pharmacological and non-pharmacological methods effectively and comprehensively. The non-

pharmacological method in the form of foot massage is expected to be able to control the pain felt suddenly so that post-caesarean section patient's activities are not disturbed and can pass through the phase of independence.

V. CONCLUSION

Foot massage therapy using lavender oil is effective in reducing the intensity of pain in mothers after giving birth using the Sectio Caesarea method.

REFERENCES

- Amalia, L. (2021). "Pengaruh Latihan Range Of Motion Pasif Terhadap Waktu Pulih Sadar Pasien Post Operasi Dengan General Anestesi Di Ruang Pemulihan RSUD DR. Soedirman Kebumen". Skripsi Thesis. Yogyakarta: Poltekkes Kemenkes.
- Arif, A.Z. (2020). Biostatistik Penelitian Kesehatan Nonparametrik Dengan Panduan Dan Petunjuk Teknis Penggunaan SPSS. Kediri: Lembaga Mutiara Hidup Indonesia
- Arikunto, S. (2010). Prosedur Penelitian. Jakarta: Rineka Cipta
- Andarmoyo, S. (2013). Konsep & Proses Keperawatan Nyeri. Jogjakarta: ArKuzz
- Babu, J., Annie, A. M., & Renuka, K. (2019), "Effectiveness of hand massage vs foot massage for pain in incision site among postcesarean mothers admitted in obstetrical care units at Mahatma Gandhi Medical College and Research Institute", *Puducherry journal of nursing*, Vol. 12, No. 3, hh. 70–73.
- Chanif. (2012). *The Effect of Massage On Acute Postoperative Pain in Indonesian Patients after Abdominal Surgery. A Thesis Submitted in Partial Fulfillment of The Requirements for the degree of Master of nursing Science. Prince of Songka University*
- P.C., & Norman. (2014). *Obstretre Williams*, Edisi : 21, Vol : 1. Jakarta: EGC
- Dahlan & Sophiyudin, M. (2013). *Besar Sampel dan Cara Pengambilan Sampel*. Jakarta: Salemba Medika
- Ernawati., Damalita, A. F., Hubaedah, A., Iriani, N. F., Joeliatin., Fajrin, D. H., Widjayanti, Y., Faradisy, R., Widyawati, M. L. I., Jayanti, N., Nilawati, S., Nuraini, I., Purmahardini, N., Rohemah., Dewi, R. S., Karo, M. B., & Masyayih, W. A. (2022). *Ketidaknyamanan dan Komplikasi Yang Sering Terjadi Selama Persalinan dan Nifas*. Malang: Rena Cipta Mandiri
- Fatmawati, E., Suryaningsih, M., & Marmi. (2017). *Asuhan Kebidanan Patologi*. Jakarta: Trans Info Media
- Fatmawati, R. & Fauziah, F. (2018). *Lavender Aromaterapy Effectiveness In Decreasing Pain In Patient Poast SC*. *Jurnal Ilmiah Maternal* Volume 2 No.3, Page: 203 E-ISSN: 2541-5085
- Handayani, S. (2015). "Pengaruh Mobilisasi Dini Terhadap Intensitas Nyeri Post Operasi Sectio Caesarea Di RSUD Moewardi". Skripsi. Surakarta: Program Studi S-1 Keperawatan. Sekolah Tinggi Ilmu Kesehatan Kusuma Husada
- Hariyanto, A., Suharyo & Supriyadi. (2015). Efektivitas Foot and Hand Massage Terhadap Respon Fisiologis dan Intensitas Nyeri Pada Pasien Infark Miokad Akut. *Ilmu Keperawatan dan Kebidanan*. Vol. 2, No. 3 Desember 2015: hlm. 113-122
- Hartatik, A. & Sari, R. P. (2021). Efektivitas Terapi Pijat Kaki Tahun 2020. *Literatur Review, Nusantara Hasana Jurnal* Volume 1 No.2, Page: 26-36 E-ISSN: 2798-1428
- Herlyssa, Jehanara, & Wahyuni, E. D. (2018). Aromaterapi Lavender Essential Oil Berpengaruh Dominan terhadap Skala Nyeri 24 Jam Post Sectio Caesarea. *Jurnal Kesehatan*.
- Hurst. (2016). *Belajar Mudah Keperatan medikal bedah Volume 1. 83*. Jakarta: EGC

- Kementrian Kesehatan RI. (2018). Survey demografi dan kesehatan indonesia 2017. SDKI 2017, Diperoleh tanggal 5 Februari <https://archive.org/details/LaporanSDKI2017/page/n192/mode/2upari>
- Kementrian Kesehatan Republik Indonesia. (2018). Hasil Utama Riskesdas [Internet]. Jakarta; Available from: <http://www.depkes.go.id/resource/s/download/info>
- Morgan E, Maged S. M, & Michael J. M. (2014). *Clinical Anesthesiology*. 5^{ed}.USA: McGraw-Hill Companies
- Mangku, G & Senaphati, T. G. A. (2017). Buku Ajar Ilmu Anestesi dn Reanimasi. Jakarta: PT Indeks
- Masadah, Cembun, & Sulaeman, R. (2020), Pengaruh foot massage therapy terhadap skala nyeri pasien post op sectio caesarea di Ruang Nifas RSUD Kota Mataram, Jurnal keperawatan terpadu, Vol. 2, No. 1, hh. 64-70.
- Muliani, R., Rumhaeni, A., & Nurlaelasari, D. (2020). Pengaruh foot massage terhadap tingkat nyeri klien post operasi sectio caesarea, JNC , Vol. 3, No . 2, hh. 73-80.
- Nugraha, A. S. (2018). “Efektifitas Minyak Esensial Lavender Terhadap Intensitas Nyeri Pada Pasien Post Sectio Caesarea Di Ruang Bougenvile RSUD Tugurejo”. Skripsi. Semarang: Fakultas Ilmu Kesehatan. Universitas Muhammadiyah Magelang.
- Nursalam. (2017). Konsep dan Penerapan Metodologi Penelitian Ilmu Keperawatan. Jakarta: Salemba Medika
- Olawin, A. M. (2021). *Spinal Anesthesia*. National Library Of Medicine. PubMed, <https://www.ncbi.nlm.nih.gov/books/NBK537299/>.
- Potter, P. A., & Perry, A. G. (2010). Buku Ajar Fundamental Keperawatan : Konsep, Proses, dan Praktik. Volume 2, Edisi 4. Jakarta: EGC
- Pramono, A. (2015). Buku Kuliah Anestesi. Jakarta: EGC
- Rini, R. A. P. (2020). Pengaruh Kombinasi Aromaterapi Lavender Terhadap Perubahan Kecemasan, Tekanan Darah, Dan Kortisol Pada Pasien Hipertensi. Jurnal Penelitian Kesehatan Suara Forikes. Vol. 11, No. 2 April 2020, hh. 178-179.
- Satiyem, (2015). Terapi Komplementer dalam Praktik Kebidanan. Modul Pelatihan : Kementerian Kesehatan Republik Indonesia Politeknik Kesehatan Surakarta Jurusan Kebidanan. Surakarta: Politeknik Kesehatan Surakarta
- Saudia, B. E. P., & Sari, O. N. K. (2018). Perbedaan Efektivitas Endorphin Massage Dengan Kompres Hangat Terhadap Penurunan Nyeri Punggung ibu Hamil Trimester III Di Puskesmas Wilayah Kerja Sekota Mataram. Jurnal Kesehatan Prima. Vol. 12, No.1 Februari 2018: hlm. 23-29.
- Sunarsih & Ernawati. (2017). Perbedaan Terapi Massage dan Terapi Relaksasi Dalam mengurangi nyeri persalinan. 12 Jurnal Kesehatan. Vol. 8, No. 1 April 2017: hlm. 8-12.
- Tim Pokja SIKI DPP, P. (2018). Standar Intervensi Keperawatan Indonesia (Edition 1). Jakarta: DPP PPNI.
- WHO. (2015). *World Health Statistics*. http://www.who.int/world_health_statistics/2015.

BIOGRAPHY

First Author : Mei Lestari Ika Widyyati, S.Kep., Ns., M.Kes, Universitas Nazhatut Thullab Al-Muafa Sampang, Maternity Nursing.

Second Author : Atika Jatimi, S.Kep., Ns., M.Kep, Universitas Nazhatut Thullab Al-Muafa Sampang, Psychiatric Nursing.

Third Author : Mabruhoh, Amd. Kep., Universitas Nazhatut Thullab Al-Muafa Sampang, Nursing.