

The Effect of Acupressure Points H7 and LI4 on Pain Intensity Post Caesarean Section in Women Giving Birth at Bhayangkara Hospital TK.I PUSDOKKES POLRI in 2024

Suprihatin^{1*}, Rahayu Kurniawati², Vivi Silawati³

^{1,2,3} Universitas Nasional, Faculty of Health Sciences, Jakarta, Indonesia

** Corresponding Author: Suprihatin, Universitas Nasional;
Suprihatin@civitas.unas.ac.id*

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Abstract

Postoperative pain is a common problem faced by mothers after undergoing a cesarean section. Effective pain management is essential to accelerate recovery and improve patient comfort. Acupressure, as a non-invasive treatment technique, has been known to have the potential to relieve pain by stimulating certain points in the body. This study aims to determine the effect of acupressure at the H7 and LI4 points on the intensity of post-cesarean section pain in mothers giving birth at the Bhayangkara Hospital TK1 PUSDOKKES Polri in 2024. This study used a pre-experiment with a pretest-posttest with a one-group pretest-posttest design. Sampling was carried out using a purposive sampling technique of 35 respondents. The analysis used a non-parametric test, the Friedman test. The Friedman test analysis showed a significant effect of acupressure at the H7 and LI4 points on the intensity of post-cesarean section pain in mothers giving birth with a p-value of 0.000. Acupressure at the H7 and LI4 points affects the intensity of post-cesarean section pain in mothers giving birth at the Bhayangkara Hospital Level 1 PUSDOKKES Polri in 2024. Mothers giving birth with post-cesarean section surgery are advised to use the acupressure method to reduce dependence on analgesic drugs, thereby reducing the risk of side effects of drugs. They can be used as an alternative to conventional therapy in pain management.

Keywords: Acupressure, Pain intensity, Mother in labor, Sectio Caesarea

Introduction

A cesarean section, or cesarean section, is a surgical procedure that is often performed to assist the birth process by making an incision in the mother's abdominal wall and uterus. Although it is an important method in obstetrics to save the lives of

mothers and babies in certain situations, this procedure is also not without the risk of complications, including significant post-operative pain (Komarijah et al., 2023).

The World Health Organization (WHO) sets the standard incidence rate for Section Caesarea (CS) deliveries at around 5-15% in each country. Data from the Ministry of Health of the Republic of Indonesia shows that the number of cesarean sections in Indonesia reached 927,000 out of a total of 4,039,000 deliveries. Meanwhile, in private hospitals, this figure is even higher, ranging from 30-80% of total deliveries (Surmayanti et al., 2022).

The pain experienced by mothers after a cesarean section often causes discomfort and fear of early mobilization and interaction with the baby, which can ultimately lead to problems in the breastfeeding process (Listyani et al., 2023). The use of conventional analgesics such as opioids is often needed to manage this pain, but their use has the risk of unwanted side effects, especially in pregnant or breastfeeding mothers (Bristow, et. al., 2020).

In response to this problem, interest in non-pharmacological therapies has increased, with acupressure being one of the most promising. Acupressure is a traditional Chinese medicine technique that involves applying pressure to acupressure points on the body to stimulate the flow of energy or "qi". Two acupressure points that are often used in the context of reducing post-cesarean pain are the H7 (Shenmen) point, located on the inside of the wrist, and the LI4 (Hegu) point, located between the thumb and index finger (Chen et al., 2021).

Recent studies have shown that acupressure can be an effective alternative in reducing post-cesarean pain. For example, a meta-analysis by Chen et al. (2021) found that the use of acupressure at certain points can significantly reduce pain intensity and improve patient comfort after cesarean section (Chen et al., 2021).

Listyani's (2023) study analyzed the differences in pain intensity in post-partum mothers with a history of cesarean section delivery. The results of the analysis of this study showed that the p-value was $0.002 < 0.05$, so the hypothesis was accepted. This means that there is an effect of acupressure on the HT7 and LI4 points on the intensity of pain in mothers after cesarean section surgery at Puri Bunda Hospital, Denpasar in 2022. The importance of holistic and integrated post-cesarean section pain management includes not only medical aspects but also psychological and social aspects. In this case,

alternative therapies such as acupressure offer a complementary approach and have the potential to reduce dependence on analgesic drugs, as well as minimize the risk of possible side effects (Chen et al., 2021).

Bhayangkara Hospital TK I PUSDOKKES Polri is one of the hospitals that have good delivery facilities, the facilities provided are both for normal delivery and cesarean section for patients who need it. Based on the results of data from the medical records of Bhayangkara Hospital TK I PUSDOKKES Polri in the postpartum care room in January-December 2023, data was obtained from a total of 2,050 mothers who gave birth, 1,676 of them underwent cesarean section delivery, which is equivalent to 81.76% and normal delivery as many as 374 people (18.24%). In 2024, January-July, the number was 474 people, delivery using cesarean section was 381 people (80%) and normal delivery was 84 people (17%). The results showed that there was a decrease in the number of cesarean section deliveries by 3%. Post-cesarean section pain management methods at Bhayangkara Hospital TK I PUSDOKKES Polri have not been widely studied, especially using acupressure. Therefore, this study aims to evaluate the effect of acupressure at points H7 and LI4 on the intensity of post-cesarean section pain at Bhayangkara Hospital TK I PUSDOKKES Polri. Thus, this study is expected to provide deeper insight into the effectiveness of acupressure in reducing pain after cesarean section surgery, as well as provide a scientific basis for the development of more effective pain management methods in the future.

Method

This study uses a pre-experimental design, with a one-group pretest-posttest design. This design has only one treatment group and no comparison group (control). In this study, respondents were given two acupressures at 6 hours and 12 hours post-cesarean section with acupressure points H7 and LI4. Pain intensity measurements were carried out three times, namely in the first 6 hours, the second 6 hours, and the third 6 hours post-cesarean section using the Numeric Rating Scale (NRS) measuring tool.

The population in this study was 70 mothers who gave birth by cesarean section at the Bhayangkara Hospital, TK I, PUSDOKKES Polri. The technique in sampling uses non-probability sampling with a purposive sampling method, namely the participating samples are those that meet the inclusion and exclusion criteria by the

research objectives. The sample size is determined by considering the population of mothers in labor who meet the inclusion and exclusion criteria. The sample size obtained is 35 people.

This study was in the Bhayangkara Hospital TK I PUSDOKKES Polri. This hospital was chosen because it has a significant number of patients undergoing section caesarea operations, is easily accessible to researchers, and has adequate facilities to support data collection.

The instrument used in this study to measure pain intensity is the Numeric Rating Scale (NRS), as developed by Mc. Caffery et al. (1999). NRS is an effective pain assessment method and is often used because of its simplicity. In this instrument, respondents are asked to describe the intensity of pain they feel by choosing a number from 0 to 10. The number 0 indicates no pain, while the number 10 describes the worst pain imaginable. Respondents choose the number that best matches the sensation of pain experienced. Measurements are recorded on the observation sheet, which consists of a pain intensity change monitoring sheet.

The research data were analyzed univariately and bivariately. This univariate analysis is used to describe the effect of acupressure at points H7 and LI4 on the intensity of pain after cesarean section surgery in women giving birth. while bivariate analysis is carried out to determine the relationship between two variables.

Results

This study was conducted on 35 respondents with three measurements. Acupressure was given 6 hours after cesarean section surgery and 12 hours after cesarean section surgery.

Univariate Analysis

Table 1

Average Value of Post-Caesarean Section Pain Intensity Before and After Acupressure

Post SC Pain		N	Mean	SD
Measurement	I	35	7.06	0.63
Measurement	II		3.89	0.83
Measurement	III		2.03	0.78

Based on Table 1, the results of pain intensity measurements were obtained, in the first measurement the average value was 7.06 with a standard deviation of 0.63. In the second measurement after acupressure, the average value was 3.89 with a standard deviation of 0.83. Furthermore, in the third measurement, the average value was 2.03

with a standard deviation of 0.78. Because in all data the average value is greater than the standard deviation, it can be concluded that the data is not diverse. This means that the pain measurement values tend to be close to the average and do not show significant variation.

Normality test

Table 2
Pain Intensity Normality Test in Women Giving Birth Before and After Acupressure

Uji Normalitas Shapiro-Wilk		Post-SC Pain Intensity		
		Results		Decision
Measurement	I	35	0.000	Tidak Normal
Measurement	II		0.001	Tidak Normal
Measurement	III		0.000	Tidak Normal

In Table 2 the results of the normality test show the Sig. value in the first measurement of 0.000 (<0.05), the second measurement of 0.001 (<0.05), and the third measurement of 0.000 (<0.05). The results of the normality test on all data are known to have a Sig. value smaller than the specified alpha (0.05), so the decision shows that the data is not normally distributed and further data analysis is carried out using a non-parametric test in the form of the Friedman Test.

Bivariate Analysis

Uji Friedman

Table 3
The Effect of Acupressure Points H7 and LI4 on Post-Caesarean Section Pain Intensity in Women Giving Birth

Post SC Pain	N	Mean Rank	Chi-Square	P-value
Measurement I	35	3.00	69.51	0.000
Measurement II		1.99		
Measurement III		1.01		

Table 3 is the result of Friedman's test to measure changes in pain intensity at three different measurement times after acupressure intervention. In the first measurement, a mean rank of 3.00 was obtained indicating that the pain intensity was at the highest level. In the second measurement, the mean rank decreased to 1.99, indicating a decrease in pain intensity compared to the first measurement. In the third measurement after the intervention, the mean rank further decreased to 1.01, indicating the lowest pain intensity among the three measurement times. This gradual decrease in the mean rank indicates that acupressure at points H7 and LI4 is effective in reducing pain over time. The calculated chi-square value of 69.51 is the result of the chi-square test

calculation on the analyzed data. This number shows how big the difference is between the observed frequency of the research data and the expected frequency if there is no significant difference or relationship (based on the null hypothesis). The chi-square value of table 7.815 is the threshold used as a reference to determine whether the results of the statistical test are significant or not. This threshold is determined based on the level of significance (usually 0.05) and certain degrees of freedom.

If the calculated chi-square value is greater than the table chi-square value, as in this study ($69.51 > 7.815$), then H_0 is rejected. This means that the initial assumption stating that there is no significant difference or relationship between the variables tested (H_0) is not supported by the data. Conversely, the alternative hypothesis (H_a) stating that there is a significant difference or relationship is accepted. In other words, the results of the statistical test show a real difference or relationship between the variables analyzed.

It is known that the p-value of 0.000 is smaller than 0.05 indicating that there is a significant influence between the variables tested. The results obtained did not occur by chance and there is strong evidence that these variables do have a real relationship or effect that acupressure has the effect of reducing pain. The results of this analysis confirm that acupressure at points H7 and LI4 affects the intensity of pain after caesarean section surgery in mothers giving birth at the Bhayangkara Hospital, TKI, PUSDOKKES Polri.

Discussion

Based on the results of the descriptive analysis in this study, the measurement of postoperative pain intensity of sectio caesarea showed a significant decrease after acupressure was given at points H7 and LI4. This decrease was seen in three stages of measurement, in the first measurement the average value of pain intensity was 7.06. Next, in the second measurement, the average value of pain intensity decreased to 3.89, and in the third measurement, the average value became 2.03. These results indicate that acupressure has a positive effect in reducing post-operative pain, thus helping mothers feel more comfortable and speeding up the recovery process.

Points H7 (Shenmen) and LI4 (Hegu) are two acupressure points that are known to be effective in reducing pain. Point H7, located on the wrist, is often used to

calm the mind and reduce anxiety, while point LI4, located between the thumb and index finger, is known as a strong point for relieving pain and tension.

Research by Sudjarwo and Solikhah (2023) showed that after being given acupressure, the average pain score (mean) ranged from 1 to 3 on the pain scale, with a median of 2 and a mode of 2, indicating that the pain was in the mild category. The pain felt by post-cesarean section patients felt like a light pinch on the skin, where the patient could communicate well and follow orders without difficulty.

The researchers assumed that acupressure at points H7 and LI4 had a significant analgesic effect on mothers undergoing cesarean section surgery. The consistent decrease in pain intensity in the second and third measurements indicated that this technique could be used as an alternative or complementary treatment for post-operative pain. The researchers also assumed that this acupressure was safe and acceptable to patients, considering that there were no reports of significant side effects during the study. Thus, the results of this study provide strong evidence to support the use of acupressure as part of post-cesarean section pain management at the Bhayangkara Hospital TK. I PUSDOKKES Polri.

The results of the bivariate analysis with the Friedman test showed that acupressure at points H7 and LI4 significantly affected the decrease in pain intensity in mothers undergoing cesarean section. In the first measurement, which was carried out 6 hours after the intervention, the pain intensity was at the highest level. However, 12 hours after the intervention, the pain intensity showed a significant decrease and after 24 hours the pain intensity was at the lowest level. In general, the mechanism of action of acupressure can be explained through several main mechanisms. Pressure on acupressure points on the surface of the body can stimulate type I and II afferent nerves or A-delta fibers in the muscles, which send impulses to the anterolateral tract in the spinal cord. In the spinal cord, pain is inhibited presynaptically by the release of enkephalin and dynorphin, which prevent pain messages from reaching the spinothalamic tract. In addition, acupressure stimulates midbrain structures by activating cells in the periaqueductal gray matter and raphe nucleus. The signal is then sent down the dorsolateral tract, causing the release of the monoamines norepinephrine and serotonin in the spinal cord. These neurotransmitters inhibit pain presynaptically and postsynaptically by reducing signal transmission through the spinothalamic tract.

Finally, stimulation of the hypothalamic-pituitary complex causes the systemic release of beta-endorphins into the bloodstream from the pituitary gland, accompanied by the release of adrenocorticotrophic hormone.

In line with Azizah's (2023) study which identified differences in the provision of massage interventions at the combination points LI4 and SP6 on postpartum pain CS, the results of the analysis showed that acupressure intervention at the combination points LI4 and SP6 had a significant effect on pain intensity in post-cesarean section surgery. Acupressure is a non-pharmacological treatment method that is effective in treating pain and can be given to patients with a history of allergies to almost all types of drugs. The intensity of pain felt by respondents changed significantly after being given the intervention, which was caused by massage at certain points. The researchers assume that acupressure is effective as a non-pharmacological pain management method after cesarean section surgery, with cumulative and sustainable effects, as evidenced by the decrease in pain intensity at various measurement times after intervention at points H7 and LI4. The results of this study are consistent with the theory of acupressure, which states that pressure on certain points can stimulate nerves, activate the central nervous system, and trigger the release of neurotransmitters that inhibit pain transmission. The decrease in pain intensity is also influenced because patients undergoing cesarean section receive pharmacological analgesics as part of the standard pain management protocol. The use of analgesics certainly contributes significantly to pain reduction. However, the combination of acupressure and analgesics can provide dual benefits, namely reducing the dose of analgesics needed and reducing patient dependence on drugs, especially in patients who have a risk of allergies or side effects.

Limitation

The short duration of intervention may not be sufficient to observe more significant changes in reducing the intensity of maternal pain after cesarean section. Research with a longer duration can provide a clearer picture of the long-term effects of acupressure intervention.

The number of respondents involved in this study was relatively small. A larger sample is needed to increase the validity and reliability of the research results and to allow the generalization of the findings to a wider population.

Pain measurement using the Numeric Rating Scale (NRS) relies on the patient's

subjective perception, which can vary between individuals. External factors such as mood, social support, and the patient's uncontrolled environment can also affect pain perception.

Conclusion

From the results of the research that has been conducted, the following conclusions can be drawn the average value of post-caesarean section pain intensity in mothers giving birth was 7.06 in measurement I, 3.89 in measurement II, and 2.03 in measurement III. After that, there is a difference in the intensity of post-caesarean section pain between measurements I, II, and III in mothers giving birth at the Bhayangkara Hospital TKI PUSDOKKES Polri in 2024.

References

1. Abdurachman. (2016). Mudah Akupunktur Melalui Anatomi. Jurnal Arti Bumi Intaran, 51(1), 51.
2. Azizah, N., Rosyidah, R., & Rohamah, J. (2023). Acupuncture at points LI4 and SP6 on Postpartum Sectio Caesarea (SC) Pain. Academia Open, 8(1), 1–9. <https://doi.org/10.21070/acopen.8.2023.6980>
3. Betran, A. P., Ye, J., Moller, A. B., Souza, J. P., & Zhang, J. (2021). Trends and projections of caesarean section rates: Global and regional estimates. BMJ Global Health, 6(6), e005671. <https://doi.org/10.1136/bmjgh-2021-005671>
4. Komarijah, N., Setiawandari, & Waroh, Y. K. (2023). Determinan Kejadian Persalinan Sectio Caesarea (Sc) Di Rsud Syamrabu Bangkalan. Prosiding Seminar Nasional Hasil Riset Dan Pengabdian, 5(E-ISSN: 2776-5105), 2513– 2522.
5. Listyani, N., Suarniti, N. W., & Ningtyas, L. (2023). Pengaruh akupresur titik H 7 dan titik Li 4 terhadap intensitas nyeri luka post sectio caesarea di rumah sakit puri bunda Denpasar tahun 2022. *Jurnal Ilmiah Kebidanan (The Journal Of Midwifery)*, 11, 236–241. <https://doi.org/10.33992/jik.v11i2.2681>
6. Maryunani. (2015). *Nyeri dalam Persalihan dan teknik cara penanganannya*. Jakara: Trans Info Medika.
7. Notoatmodjo, S. (2018). *Metodologi Penelitian Kesehatan*. Jakarta: Rineka Cipta.
8. Nurhayati, F. N., Prasetyo, B., & Miftahussurur, M. (2023). Analysis of Caesarean

- Section Rates and Source of Payment Using the Robson Classification System. *Journal of Maternal and Child Health*, 08(01) (e-ISSN: 2549-0257), 1–11.
9. Nursalam. (2016). *Metodologi Penelitian Ilmu Keperawatan*. Jakarta: Salemba Medika.
 10. Son, C.-G. (2019). Clinical application of single acupoint (HT7). *Integrative Medicine Research*, 8(4), 227–228. <https://doi.org/10.1016/j.imr.2019.08.005>
 11. Sudjarwo, E., & Solikhah, K. (2023). Pengaruh Penerapan Terapi Akupresur terhadap Intensitas Nyeri Pada Pasien Post Operasi Sectio Caesarea (SC) Acupressure Therapy to Pain Levels in Post-C-section (SC) Patients *Jurnal Manajemen Kesehatan Yayasan Dr. Soetomo*, 9(1), 1–9. www.jurnal.tikes-yrsds.ac.id
 12. Surmayanti, P. Jufri, F., & Sainah. (2022). Karakteristik Persalinan Sectio Caesarea (SC) di RSU Bahagia Makassar. *Sehat Rakyat: Jurnal Kesehatan Masyarakat*, 1(3, e-ISSN0852-1239 |), 205–214. <https://doi.org/10.54259/sehatrakyat.v1i3.1083>
 13. Syuhada, R., & Pranatha, A. (2017). Pengaruh Teknik Akupresure Terhadap Perubahan Skala Nyeri Pada Klien Post Operasi Sectio Caesarea Di RSUD 45 Kuningan tahun 2017. *Jurnal Ilmiah Indonesia*, 2(6), 122–139.
 14. Utami, S. (2016). Efektivitas Aromaterapi Bitter Orange Terhadap Nyeri Post Partum Sectio Caesarea. *Unnes Journal of Publilc Health*, 5(4), 316. <https://doi.org/10.15294/ujph.v5i4.12422>
 15. Yogatama, A., & Budiarti, W. (2019). Determinan Persalinan Sesar Wanita tanpa Komplikasi Kehamilan di Indonesia 2017 (Determinants of Cesarean Section on Woman Without Pregnancy Complication in Indonesia 2017). *Seminar Nasional Official Statistics*, 2017, 545–556.
 16. Yudiantma, F., Rochana, N., & Zulfa, A. (2021). Pengaruh Terapi Akupresur Dalam Menurunkan Tingkat Nyeri. *Journal of TSCNers*, 6(1), 58–69.
 17. Yusita, I., Mulyani, Y., & Arianti, N. D. (2021). Penerapan Akupresur Sanyinjiao (SP 6) dan Hegu (LI 4) Pada Penurunan Intensitas Nyeri Persalinan Kala 1 Fase Aktif Di Puskesmas X. *Jurnal Ilmiah Ilmu Kebidanan Dan Kandungan*, 13(3), 128
 18. Zakiyah, A. (2015). *Nyeri: Konsep dan Penatalaksanaan dalam Praktik Keperawatan Berbasis Bukti*. Jakarta: Salemba Medika.