JOSING: Journal of Nursing and Health
Volume 4, Nomor 1, July-December 2023
e-ISSN: 2745-7877
p-ISSN: 2746-0851
DOI: https://doi.org/10.31539/josing.v4i1.7306

DECREASING LABOR PAIN WITH COUNTER-PRESSURE MASSAGE DURING THE FIRST STAGE OF LABOR ACTIVE PHASE

Mahayanti Arum Wulandari[1], Rukmaini[2], Risza Choirunissa[3]
National University[1,2,3]
arum.mahayanti@gmail.com[1]

ABSTRACT

This study aims to determine whether counter-pressure massage reduces the intensity of labor pain in mothers who give birth in the first stage of the active phase of labor. This research method uses an experimental research type, a pre- and post-test design with a control group design. The research results showed that the average score on the pre-test pain scale reached 7 in both the intervention and control groups. Then, the average pain scale value in the post-test was 5.07 mg/dL in the intervention group and 6.67 mg/dL in the control group. Based on the Independent T-test, it can be concluded that there is a difference in the average level of pain between the intervention group and the control group. In conclusion, Counter-pressure Massage can reduce pain by suppressing pain signals and increasing blood and oxygen flow to all tissues. Midwives need to increase their knowledge about pain relief during childbirth, significantly counter-pressure massage.

Keywords: Labor Pain, Counter-Pressure Massage, Active Phase First Stage of Labor

INTRODUCTION

Birth is the process of less than 24 hours of fetal discharge in pregnancy for enough months, about 37–42 weeks, and can be born spontaneously without special equipment or assistance with no complications, and it does not hurt the mother as well as the baby. During childbirth, a mother can feel pain, which can immediately lead to the death of the mother and the baby. Birth pain is the subjective experience of the physical sensations associated with uterine contractions, stretching of the cervix, and fetal decrease during childbirth (Fitriyanti, 2017). Treatment and monitoring of childbirth pain, especially at the time of entering the active phase, are very important because they determine whether the mother can undergo labor with or without intervention.

According to the World Health Organization (2018), the prevalence of pain during childbirth was quite high, at approximately 86.8%, and about 35.5% of mothers who give birth in Indonesia experience severe labor pain and require proper treatment. There are two types of treatment for labor pain: pharmacological and non-pharmacological. Most pharmacological actions have side effects for both mothers and babies. Thus, non-pharmacological action becomes a safe alternative that helps to relieve pain during labor, one of which is massage or compression techniques.

AN-NISA Hospital, as the most referred Type C Private Hospital in Indonesia (BPJS Kesehatan, 2022), has the largest number of referrals from primary health services for maternity services in Tangerang City. According to

data from 2022, there were 283 patients born pervaginally feeling severe pain. Then, in a preliminary study in April 2023, 65.8% of patients born pervaginally had a high scale of pain when childbirth entered the first stage of labor's active phase, and the overall patient did not know the Counter-pressure techniques to reduce the pain during labor.

According to the study's findings, there is a substantial decrease in pain levels before and after the Counter-pressure intervention, with a p-value less than 0.05. Astuti et al., (2021) all discovered efficient Counter-pressure approaches to reduce discomfort during labor. Supported by Ma'rifah research, which discovered that Counter-pressure reduced pain by 2,364 times more than other approaches.

Pain during childbirth is normal, especially for a woman who is giving birth for the first time. The severe pain of childbirth allows moms to choose the simplest and quickest technique to relieve their pain. The current situation is that I have a tendency to perform cesarean surgery even when there are no apparent indications. As labor progresses, the strength of each contraction increases, resulting in a greater or stronger force of pain. The feeling of pain in the first stage is caused by contractions of the uterine muscles, hypoxia of the contracting muscles, stretching of the cervix, ischemia of the uterine corpus, and stretching of the lower uterus. This pain stimulus moves from the periphery, passing through the spinal cord, brain stem, thalamus and cerebral cortex (Adahila et al., 2021; Juniartati & Widyawati, 2018). Counterpressure massage can help overcome pain sharp during delivery and can provide a pleasant sensation and reduce feelings of discomfort during contractions or between contractions (Satria, 2018). Massage techniques were chosen because they are known to increase relaxation, reduce pain and stress. And it also has many benefits and is effective in speeding up recovery and improving hormonal balance (Fasikhatun et al., 2019).

According to the current study, Counter-pressure Massage is one of the gate control techniques that can reduce pain by suppressing pain signals and improving blood and oxygen flow to the entire tissue (al., 2019). Following the action, the intensity of pain decreased from the excruciating pain scale to the severity scale and the moderate pain scale.

In both the intervention and control groups, the mean labor pain before intervention was up to 7. The intervention group then had lower pain levels than the control group at the post-test. All respondents reported pain on a scale of 9–10 before the intervention and pain on a scale of 4-6 afterward. The findings of this study are consistent with the findings of, who discovered that delivery pain before the counter-pressure massage was on a scale of 9–10 and that after the massage, pain fell the most on a scale of 3-6.

Massage techniques stimulate blood circulation and tissue metabolism, thereby providing comfort to the area given therapy by increasing endogenous morphine harmonins such as endorphins, encephalines, and dinorphines while lowering stress harmonics such as cortisol, norepinephrine, and dopamine. This technique reduces muscle tension, increases the range of joint movements, and reduces pain. Puspitasari & Astuti (2017) found that mothers who received 20 minutes of massage every hour during labor would be comforted and feel less pain.

There are a lot of massage techniques used in childbirth; one of them is counter-pressure massage. Some studies have found that the Counter-pressure technique can reduce pain during childbirth and can be used as an alternative to

pharmacological treatment. Counter-pressure is a powerful pressure massage on the back of the body using a wrist or tennis ball that can provide comfort due to the relaxation of the muscles around the pelvis and facilitate the baby's descent through the birth canal. This technique is effective in helping reduce the pain of childbirth and is relatively safe as it has no side effects on the mother or the babies (Astuti et al., 2021).

AN-NISA Hospital, as the most referred Type C Private Hospital in Indonesia (BPJS Kesehatan, 2022), has the largest number of referrals from primary health services for maternity services in Tangerang City. According to data from 2022, there were 283 patients born pervaginally feeling severe pain. Then, in a preliminary study in April 2023, 65.8% of patients born pervaginally had a high scale of pain when childbirth entered the first stage of labor's active phase, and the overall patient did not know the Counter-pressure techniques to reduce the pain during labor.

Based on this data, researchers are interested in finding out the impact of Counter-pressure massage on reducing the intensity of labor pain in mothers who are giving birth during the first stage of labor's active phase. The results of this research will be used as additional skills for the midwives at AN-NISA Hospital to deal with the mother's pain during the delivery process.

RESEARCH METHOD

The study adopted experimental research, using a pre- and post-test with a control group design, which means that the researchers will divide the respondents into two groups. Group one was an experimental group that received counter-pressure massage, and Group two was a control group that did not receive counter-pressure massage. Then the researchers assessed the labor pain using the NRS (Numerical Rating Scale). Informed consent was obtained from all participants who were purposely sampled. Mother in the first stage of labor's active phase with pelvic disorders, a sacral wound, and psychiatric disorders, used as an exclusion as a sample of research.

RESULT

During the period of the study, the researcher collected data of 15 (fifteen) mothers in the first stage of labor's active phase who had experienced labor pain. Using the NRS, it has been identified that the results of the pain scale both in the intervention and control groups. After that, researchers used the independent T-Test method to know if counter-pressure massage was able to reduce labor pain in participants. The results are listed as follows:

Table. 1
Study Result

Group	n	Intervention	Control	*p*
		Mean ± DS	Mean ± DS	
Pre-Test *Pain level before Counter-presure*	15	7.53 ± 1.245	7.33 ± 0.816	0.607
Post-Test *Pain level after Counter-presure*	15	5.06 ± 1.099	6.66 ± 0.816	0.000

First, in the control group, the average value of the pre-test pain scale was 7.33 mg/dL, and the standard deviation was 0.816 mg/dL. Then the average value of the pain scale on the post-test was 6.67 mg/dL, and the standard deviation was 0.816 mg/dL.

Second, in the intervention group, the average value of the pain scale before the Counter-pressure massage technique was 7.53 mg/dL with a standard deviation of 1.246 mg/dL. Then, after the intervention, the average value of the pain scale was 5.07 mg/dL, and the standard deviation was 1.100 mg/dL.

Third, based on the Independent T-test, the mean value of pain in the intervention group was 5.06% smaller compared to the control group. In the pre-test, the p-value was 0.607 (>0.05), so it can be concluded that there was no difference in the rate of pain between the intervention and the control groups. The post-test obtained a p-value of 0.000 (<0.05), so it can be concluded that there was an average difference in the rate of pain between the intervention group and the control group.

DISCUSSION

We wanted to see if Counter-pressure massage had any effect on pain levels during the active phase of first-stage labor. Labor pain is an unpleasant sensation that occurs throughout the childbirth process. Uterine muscular tension, pelvic muscle strain, and psychological circumstances all contribute to labor pain. This is the contraction that causes the cervix to open, allowing babies to be delivered.

Massage techniques stimulate blood circulation and tissue metabolism, providing comfort to the area being treated by increasing endogenous morphine harmonics such as endorphins, encephalins and dynorphins while reducing stress harmonics such as cortisol, norepinephrine and dopamine. This technique reduces muscle tension, increases joint range of motion, and reduces pain. Puspitasari & Astuti (2017) found that mothers who received a massage for 20 minutes every hour during labor felt comfortable and the pain was reduced. The results of research by Christiani et al., (2022) showed that there was a difference in scores before and after being given counterpressure massage (<0.05) with the average decrease in the intervention group (0.95). In line with Murniati's (2018); Damayanti & Suhrawardi (2019); Aisyah et al., (2021) research, it was stated that there was a decrease in pain intensity in respondents who had undergone counterpressure, while the group who had not received counterpressure did not experience a decrease in pain intensity.

There are many massage techniques used during childbirth; one of them is counter-pressure massage. Several studies have found that the counter-pressure technique can reduce pain during childbirth and can be used as an alternative to pharmacological treatment. Counter-pressure is a strong pressure massage on the back of the body using the wrist or a tennis ball which can provide comfort by relaxing the muscles around the pelvis and making it easier for the baby to descend through the birth canal. This technique is effective in helping reduce pain during childbirth and is relatively safe because it does not cause side effects for the mother or baby (Astuti et al., 2021).

Rusmilia & Indrayani (2022) explained that counter pressure can be used as a technique in pain management to reduce labor pain. The results of research by Sari et al., (2020) show that labor pain using the VAS (Visual Analog Scale) measurement scale in the treatment group is more effective than the control group as seen from the P-value = 0.000. There was a significant difference between before and after the intervention in the application of a combination of counter pressure in the treatment group and the control group who received back massage. Counter pressure massage stimulates the body to release pain-relieving hormones, namely endorphins, which cause labor to proceed more gently, naturally and smoothly (Chasanah et al., 2023; Oktriani et al., 2018).

The presence of counter pressure massage techniques can close the gate for pain messages that will be transmitted to the spinal cord and brain. In addition, the strong pressure in this technique can activate endorphin compounds found in the synapses of spinal nerve cells and the brain, so that the transmission of pain messages can be achieved. inhibited and causes the sensation of pain to decrease (Adi, 2020). Back pressure is applied to the bony structures of the pelvis and reduces tension on the ligaments. This reduction in tension reduces some of the pain caused by contractions (Hairunisyah et al., 2023). In line with research by Nasution & Batubara (2021) which states that there is an influence of counter-pressure massage on first stage pain levels in mothers giving birth.

According to the current study, Counter-pressure Massage is one of the gate control techniques that can reduce pain by suppressing pain signals and improving blood and oxygen flow to the entire tissue (al., 2019). Following the action, the intensity of pain decreased from the excruciating pain scale to the severity scale and the moderate pain scale. Counter pressure can relieve tension in the sacroiliac ligaments and help women reduce labor pain during the first stage of labor. The counter pressure technique is performed in the lumbar area where the sensory nerves of the uterus and cervix run along the sympathetic nerves entering the spinal cord via thoracic nerve impulses 10- 11-12 to lumbar 1. This pain can be inhibited by applying pressure, and stimulation of the nerves with the diameter of the main cause of the control gate will be closed, and no painful stimuli can be transmitted to the cerebral cortex (Maisaroh & Maryani, 2022).

Based on several theories and research results, Counter-pressure Massage is effective in reducing labor pain. In addition, Counter-pressure Massage also provides some benefits that reduce back pain and do not cause complications for both the mother and the babies.

CONCLUSION

Counter-pressure Massage is a technique for reducing pain labor by applying continual pressure to the patient's sacrum bone with the palm of the hand during the contraction period. This technique can reduce pain by suppressing pain signals and improving blood and oxygen flow to the entire tissue.

SUGGESTION

It is important for midwives to increase their knowledge about pain relief on labour, specially Counter-pressure Massage.

REFERENCE

Adahila, A., Sulistyowati, S., & Ajiningtyas, E. S. (2021). *Pengaruh Counterpressure Massage terhadap Penurunan Intensitas Nyeri Kala I Fase Aktif pada Ibu Bersalin.* Politeknik Yakpermas Banyumas. http://repository.politeknikyakpermas.ac.id/id/eprint/369/1/18044%20-%20Pengaruh%20Counterpressure%20Massage%20terhadap%20Penurunan%20Intensitas%20Nyeri%20Kala%20I%20Fase%20Aktif%20pada%20Ibu%20Bersalin.%20Politeknik%20Yakpermas%20Banyumas.pdf

Adi, Y. P. (2021). *Pengaruh Teknik Massage Counter Pressure terhadap Nyeri Persalinan Kala I di Rsud Dr Gondo Suwarno Ungaran.* Poltekkes Semarang. https://repository.poltekkes-smg.ac.id/index.php?p=show_detail&id=27309&keywords=

Asiyah, S.., Rossilawati, R., & Titisari, I. (2021). Efek Pemberian Acupressure dan Counter Pressure pada Nyeri Kala I Fase Aktif Ibu Primipara di RS Aura Syifa Kabupaten Kediri. *Journal for Quality in Women's Health, 4*(2), 174-182. https://doi.org/10.30994/jqwh.v4i2.87

Astuti, H. P., Astuti, A. W., Agustin, D., Awaliyah, H. F., Winarti, G. R., & Jaya, V. O. (2021). Narrative Review: Pengaruh Terapi Massage Counterpressure terhadap Pengurangan Nyeri dalam Persalinan. *Jurnal Cakrawala Promkes, 3*(2). https://doi.org/10.12928/promkes.v3i2.4573

BPJS Kesehatan. (2022). *Statistik Data JKN*. Porta Data JKN: https://data.bpjs-kesehatan.go.id/bpjs-portal/action/dash-publik.cbi?page=1

Chasanah, U., Novita, A., & Fatimah, J. (2023). Pengaruh Teknik Massage Counterpressure dengan Aromaterapi terhadap Pengurangan Nyeri Persalinan pada Ibu Bersalin Kala I di Kota Depok Tahun 2022. *JMSWH Journal of Midwifery Science and Women's Health, 3*(2), 49-57. https://doi.org/10.36082/jmswh.v3i2.1046

Christiani, R., Indrayani, T., & Widowati, R. (2022). Efektivitas Massage counterpressure terhadap Intensitas Rasa Nyeri pada Persalinan Kala 1 Fase Aktif di PMB Bidan Monika Jakarta Timur. *Journal for Quality in Women's Health, 5*(1), 107-113. https://jqwh.org/index.php/JQWH/article/view/145

Damayanti, D., & Suhrawardi, S. (2019). Counter Pressure Efektif Mengurangi Nyeri Persalinan. *Caring Nursing Journal, 3*(1), 1-6. https://journal.umbjm.ac.id/index.php/caring-nursing/article/view/313

Fasikhatun, E., Sulistyowati, P., & Layliyah, Z. (2019). Gambaran Nyeri Sebelum dan Sesudah di Lakukan Tindakan Effleurage Massage Kepada Ibu Post Partum Primipara di RSUD Dr. R. Goeteng Taroenadibrata Purbalingga. *Journal of Nursing and Health (JNH), 4*(2), 56–62. https://doi.org/10.52488/jnh.v4i2.50

Fitriyanti, Q. F. (2017). *Efektivitas Massage Effleurage yang Dilakukan Suami terhadap Nyeri Persalinan Kala I Fase Laten di Kecamatan Setu.* Universitas Islam Negeri Syarif Hidayatullah. https://repository.uinjkt.ac.id/dspace/handle/123456789/36652

Hairunisyah, R., Jamila, J., Setiawati, S. (2023). Pengaruh Teknik Massage Counter Pressure terhadap Pengurangan Rasa Nyeri Persalinan Kala I. *Jambura Journal of Health Science and Research, 5*(4), 986-997. https://ejurnal.ung.ac.id/index.php/jjhsr/article/view/19668

Juniartati, E., & Widyawati, M. N. (2018). Literature Review : Penerapan Counter Pressure Untuk Mengurangi Nyeri Persalinan Kala I. *Jurnal Kebidanan, 8*(2), 112. https://doi.org/10.31983/jkb.v8i2.3740

Maisaroh, S., & Maryani, D. (2022). The Effectiveness of Counter Pressure and Endorphin Massage on Reducing Pain during First Stage of Labor in Intrapartum Mothers. *8th International Conference Public Health Solo, 17*(18), 765–771. https://media.neliti.com/media/publications/558474-the-effectiveness-of-counter-pressure-an-c17cc953.pdf

Murniati, S. (2018). Efektivitas Teknik Counterpressure untuk Mengurangi Rasa Nyeri Persalinan Kala I di Klinik Pratama Rahma Kec. Wampu Kab. Langkat Tahun 2018, Politeknik Kesehatan Kemenkes Medan. http://ecampus.poltekkes-medan.ac.id/xmlui/bitstream/handle/123456789/736/skripsi%20pdf

Nasution, A., & Batubara, N. S. (2021). Pengaruh Counter Pressure Massage terhadap Penurunan Nyeri Bersalin Kala I Fase Aktif. *Jurnal Education and Development*, *9*(4), 638-641. https://journal.ipts.ac.id/index.php/ED/article/view/3293

Oktriani, T., Ermawati, E., & Bachtiar, H. (2018). The Difference of Pain Labour Level with Counter Pressure and Abdominal Lifting on Primigravida in Active Phase of First Stage Labor. *Journal Midwifery, 3(*2), 45. http://jom.fk.unand.ac.id/index.php/jom/article/view/79

Paseno, M., Situngkir, R., Pongantung, H., Wulandari, F., & Astria, D. (2019). Massage Counter Pressure and Massage Effleurage Effectively Reduce Labor Pain. *Jurnal Ilmiah Perawat Manado, 7*(1), 20-32. https://doi.org/10.47718/jpd.v7i1.797

Puspitasari, I., & Astuti, D. (2017). Tehnik Massage Punggung untuk Mengurangi Nyeri Persallinan Kalla I. *Jurnall Ilmu Keperawatan dan Kebidanan, 8*(2), 100-106. https://doi.org/10.26751/jikk.v8i2.289

Rusmilia, D. S. D., & Indrayani, D. (2022). Counter Pressure untuk Mengurangi Rasa Nyeri Persalinan (Evidence Based Case Report). *Jurnal Kesehatan Siliwangi*, *3*(2), 196-204. https://jurnal.polkesban.ac.id/index.php/jks/article/view/995

Sari, N., Runjati, R., Fatmasari, D., & Pujiyanto, T. I. (2020). Practices of Counter Pressure and Birth Ball Exercise Combination to Increase β-Endorphin Hormone Levels in Labor Pain. *Atlantis Press, 27*(ICoSHEET 2019), 314–317. https://doi.org/10.2991/ahsr.k.200723.079

Satria, M. (2018). Pengaruh Sebelum dan Sesudah Dilakukan Pijat Punggung Teknik Conterpressure terhadap Pengurangan Rasa Nyeri Ibu Bersalin Kala I Fase Aktif di Klinik Bidan Elviana. *Menara Ilmu, XII*(5), 85–92. https://jurnal.umsb.ac.id/index.php/menarailmu/article/view/786

World Health Organization. (2018). *Intrapartum Care for a Positive Childbirth Experience*. World Health Organization. https://www.who.int/publications-detail-redirect/9789241550215

World Health Organization. (2018). Intrapartum Care for a Positive Childbirth Experience. World Health Organization