

The Effects of Endorphin Massage and Deep Breathing Relaxation Techniques on Labor Pain at the Kiswari Private Obstetric Clinic, Central Metro

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Labor pain is a physiological experience reported by nearly all parturient women. Globally, approximately 93.5% of women in labor experience moderate to severe pain, while in Indonesia, the incidence of labor pain reaches 85–90%. In Lampung Province specifically, 37,264 women (approximately 30%) experience high-intensity labor pain. Unmanaged pain can lead to anxiety, fatigue, and prolonged labor. This study aims to determine the effect of endorphin massage and deep breathing relaxation techniques on labor pain at BPM Kiswari Amd.Keb, Central Metro, in 2025. This research employed a quasi-experimental approach with a two-group pretest-posttest design. The study was conducted in July 2025 with a sample of 28 parturient women (14 in the intervention group and 14 in the control group) selected via consecutive sampling. Data were collected using observation sheets and the Numeric Rating Scale (NRS) to measure pain intensity before and after the intervention. Data analysis was performed using the Mann-Whitney U test. The results indicated that the mean pain level in the intervention group decreased from 7.29 (severe pain) to 5.00 (moderate pain), whereas no significant change was observed in the control group. The Mann-Whitney test yielded a p-value of 0.000, indicating a significant effect of endorphine massage and deep breathing relaxation techniques on reducing labor pain. It is recommended that healthcare providers, particularly midwives, implement these techniques as non-pharmacological methods of labor pain management to improve maternal comfort during the birthing process.

Keywords: Endorphin Massage, Deep Breathing Relaxation, Labor Pain, Parturient Mothers.

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1. Introduction

Nearly all parturient women experience and perceive pain during every stage of the labor process; however, individual responses and coping mechanisms for managing this pain vary. Labor pain is a unique subjective experience for each mother. Specifically, women experience labor pain during the first stage, which spans from the onset of labor until the cervix is dilated to 10 cm, or full cervical effacement. Several factors influence the intensity of labor pain, including parity, fetal size, fetal positioning, anxiety, fatigue, cultural background, and individual coping mechanisms (Siregar & Ermiami, 2023).

Based on data provided by World Health Organization (2019) according to data from 2019, labor pain occurred in approximately 210 million pregnancies annually, with an estimated 20 million women experiencing significant pain during the delivery process. Furthermore, research data from the Association of Southeast Asian Nations (ASEAN) indicates that 93.5% of labor pain is categorized as moderate to severe (Suyanto & Sulistiyah, 2025).

According to a 2020 report from the Ministry of Health of the Republic of Indonesia, the average incidence of labor pain in Indonesia remains high, with 85–90% of expectant mothers experiencing severe, uncontrolled labor pain. Conversely, only 7–15% of parturient women report labor pain that is considered manageable or controlled (Suyanto & Sulistiyah, 2025).

Based on data from the Lampung Provincial Health Office, a total of 37,264 women experienced labor pain, representing 30.0% of cases in the province, while Bandar Lampung City accounted for 20.0% (Lampung Health Office, 2019). The impact of excessive pain during the first stage of labor, if left unmanaged, can lead to maternal anxiety, which may subsequently result in prolonged labor (Lampung Health Profile, 2019).

Based on research conducted in Metro City, maternal anxiety experienced during the labor process significantly influences labor pain intensity. Preliminary survey results at a Metro City Independent Midwifery Practice (BPS) indicated that among seven parturient women, the majority (71.4%) experienced moderate anxiety levels. Furthermore, four women (57.2%) reported mild pain intensity, while three women (42.8%) experienced moderate pain intensity (Sunarsih, 2020).

The vast majority of deliveries (90%) are accompanied by severe pain, often leading expectant mothers to feel incapable of enduring the labor process. While labor pain is a common physiological occurrence, its etiology during childbirth is multifaceted, stemming from both physiological and psychological factors (Maryuni, 2020).

Mood fluctuations are common during labor and are typically precipitated by pain, stress, and clinical uncertainty. Various interventions can be employed to manage these emotional shifts, such as Relaxation Techniques. Specifically, deep breathing exercises, meditation, and positive visualization can significantly assist mothers in mitigating fear and anxiety throughout the birthing process (Wilson et al., 2023).

Continuous emotional support from partners, family members, and healthcare providers fosters a sense of security and enhances maternal self-efficacy in navigating the challenges of childbirth. Intranatal psychological adaptation is a critical component of the maternal labor experience. Factors such as social support, obstetric history, and pain management techniques play a pivotal role in influencing maternal adaptation during labor. By understanding these psychological adaptation processes, healthcare professionals including midwives can provide optimized support to help mothers navigate labor with greater composure and confidence (Wilson et al., 2023).

One of the primary factors influencing maternal psychological well-being is support from a spouse or family. Minimal interventions, such as physical touch and verbal encouragement that provide comfort and reinforcement during the labor process, have been shown to reduce the duration of delivery. Appropriate labor companionship requires a clear understanding of the specific roles required during the birthing process. Ideally, the spouse is expected to serve as an active companion; however, the fulfillment of this ideal role varies based on the spouse's readiness to confront the labor process directly. There are three distinct roles a spouse may adopt during labor: the coach, the teammate, and the witness (Wilson et al., 2023).

The most prevalent issue encountered in normal labor is labor pain. This pain typically manifests during the first stage of labor, progressively intensifying as the process advances. Within a clinical context, the nursing diagnosis for this condition is labor pain associated with fetal expulsion. The intervention in this study focuses on non-pharmacological pain management through endorphin massage and deep breathing relaxation techniques. These involve the application of gentle massage or light touch for the mother during the intrapartum period and instruction on proper deep breathing relaxation (Kollin et al., 2024).

Relaxation techniques serve as a medium to elicit the body's natural relaxation response, characterized by slower respiration, an enhanced sense of well-being, and the mitigation of anxiety or fear. In the context of childbirth, relaxation aims to induce muscle relaxation and reduce stress during the labor process. Parturient women are encouraged to focus on sensations associated with the release of muscular tension and feelings of comfort (Smith et al., 2018). Specifically, deep breathing relaxation techniques can improve the relaxation of abdominal muscles, thereby increasing the size of the abdominal cavity during the first stage of labor. This results in reduced pain and friction between the uterus and the abdominal wall due to the relaxation of the genital area musculature. During the second stage of labor, deep breathing techniques facilitate fetal expulsion by optimizing intra-abdominal pressure.

Multi-country research conducted across eight nations the United States, India, Taiwan, New Zealand, Australia, Brazil, Iran, and Sweden demonstrated that deep breathing techniques provide positive outcomes for women with elevated anxiety levels and reduce perceived labor pain. Based on the data, these outcomes were observed in 66% of vaginal deliveries and 24% of cesarean sections. Furthermore, pain levels were recorded at a mean of 8.8 in the control group compared to 7.0 in the intervention group (Leutenegger et al., 2022).

Research conducted by Sukmasary, (2025) Deep breathing relaxation techniques also significantly influence pain intensity during the first stage of labor. Based on data from 20 respondents, prior to the instruction of relaxation techniques, the distribution of pain levels was as follows: 1 respondent (5%) reported mild pain, 3 (15%) reported moderate pain, and 16 (80%) reported severe pain. However, following the intervention of deep breathing relaxation, the data showed a marked shift: 9 respondents (45%) reported mild pain, 10 (50%) reported moderate pain, and only 1 (5%) reported severe pain.

Although endorphin massage and deep breathing relaxation techniques have been individually demonstrated to reduce labor pain intensity, significant research gaps remain in the scientific literature. Most prior research has examined the efficacy of non-pharmacological interventions in isolation, focusing on a single technique exclusively (endorphin massage OR deep breathing relaxation), resulting in insufficient empirical evidence regarding the potential synergistic effects of combining both techniques. Research by Darmayanti et al (2022) in private clinic environments that serve populations with better access to maternal care remains limited, yet the demographic characteristics and clinical profiles of pregnant women in private clinics differ significantly from those in government-operated facilities or independent midwifery practices. Besides that, research by Sartika & Noorlinda (2025) revealed elevated levels of maternal anxiety, with 71.4% of parturient women experiencing moderate anxiety; however, no combined interventions specifically designed to simultaneously address both labor pain and psychological components have been developed or tested in this clinical setting. Standardization of combined intervention protocols, including optimal duration, frequency of administration, and relative timing between endorphin massage and deep breathing relaxation techniques, has not yet been established in the available literature. This study was designed to address this research gap by evaluating the effectiveness of a combined endorphin massage and deep breathing relaxation intervention for reducing labor pain intensity during the active phase of the first stage of labor at Kiswari Private Obstetric Clinic, Central Metro a clinical setting with unique characteristics that has not been thoroughly explored in prior similar research.

This study aims to evaluate the effectiveness of combining endorphin massage with deep breathing relaxation techniques in reducing labor pain intensity during the active phase of the first stage of labor at Kiswari Private Obstetric Clinic, Central Metro. The research hypothesis posits that the combined non-pharmacological intervention will be more effective in reducing labor pain intensity compared to standard care alone. This research is significant because: (1) it provides empirical evidence regarding the synergistic effects of combined interventions, which have not been previously explored in private clinical settings; (2)

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it establishes an intervention protocol that can be directly implemented by practitioners in resource-constrained private clinics; and (3) it contributes to the development of evidence-based maternal care guidelines aimed at reducing morbidity associated with uncontrolled labor pain. By integrating tactile stimulation through endorphin massage with respiratory intervention through deep breathing relaxation techniques, this study is expected to offer a safe, cost-effective, and accessible non-invasive alternative for parturient women across various levels of healthcare facilities.

2. Methods

This study employs a quantitative approach with a quasi-experimental design, specifically utilizing a two-group pretest-posttest design. The research was conducted at BPM Kiswari Amd.Keb, Central Metro, in July 2025. The study population consisted of all parturient women in the active phase of the first stage of labor at the facility during that period, totaling 28 individuals, all of whom were included in the sample via consecutive sampling. Participants were divided into two groups: an intervention group (n = 14), which received endorphin massage and deep breathing relaxation techniques for 30 minutes, and a control group (n = 14), which received no treatment. Labor pain levels were assessed before and after the intervention using the Numeric Rating Scale (NRS). Data collection was performed through direct observation utilizing standardized checklists. The primary data obtained were analyzed using SPSS software. Data analysis included univariate analysis to determine mean labor pain levels and bivariate analysis to evaluate the effect of endorphin massage and deep breathing relaxation on labor pain using the Mann-Whitney U test (Miles & Huberman, 1984).

3. Result And Discussion

Result

Univariate Analysis

Table 1. Mean Labor Pain Scores in the Intervention Group at BPM Kiswari Amd.Keb

Variabel	N	Min-Max	Mean	SD
Intervention Group				
Pre-intervention Labor Pain	14	6-9	7,29	1,204
Post-intervention Labor Pain	14	4-6	5	0,7684
Control Group				
Pre-test Labor Pain	14	5-9	7,14	1,292
Post-test Labor Pain	14	5-9	7,29	1,204

Based on the data in Table 1, the mean labor pain level among parturient women in the intervention group prior to receiving endorphin massage and deep breathing relaxation techniques ranged from 6 to 9, with a mean of 7.29 and a standard deviation (SD) of 1.204. These results indicate that before the intervention, the majority of the women experienced labor pain categorized as severe.

Following the intervention, labor pain levels decreased to a range of 4 to 6, with a mean of 5.00 and an SD of 0.784. This demonstrates that after the application of endorphin massage and deep breathing relaxation, labor pain intensity was reduced to the moderate category.

In contrast, the mean labor pain level in the control group during the pre-test ranged from 5 to 9, with a mean of 7.14 and an SD of 1.292, indicating that most participants initially experienced severe pain. Upon subsequent observation without intervention (post-test), pain levels ranged from 5 to 9, with a mean of

7.29 and an SD of 1.204. These findings show that in the control group, labor pain levels did not experience a significant decrease and instead remained stable or showed a slight increase.

Bivariate Analysis

Table 2. The Effect of Endorphin Massage and Deep Breathing Relaxation Techniques on Labor Pain at BPM Kiswari Amd.Keb, Central Metro

Group	Pretest	Posttest	Pretest-Posttest Difference	<i>p-value</i>
Intervention Group (n=14)	7,29	5	2,29	0,000
Control Group (n=14)	7,14	7,29	-0,15	

Based on the data in Table 2, the Mann-Whitney U test revealed that the mean pain score in the intervention group was 7.29 prior to the administration of endorphin massage and deep breathing relaxation. Following the intervention, the mean pain score decreased to 5.00, resulting in a mean difference of 2.29. This figure indicates that mothers who received the intervention experienced a substantial reduction in pain, suggesting that combined endorphin massage and deep breathing relaxation techniques are effective in alleviating labor pain.

In contrast, the control group, which received no intervention, had an initial mean pain score of 7.14, which slightly increased to 7.29 at the post-test. This resulted in a mean difference of -0.15, signifying that the pain did not subside and instead intensified slightly. This finding illustrates that without intervention, labor pain tends to remain stable or increase.

The bivariate analysis yielded a *p*-value of 0.000 ($p < 0.05$), demonstrating a statistically significant effect of endorphin massage and deep breathing relaxation techniques on the reduction of labor pain at BPM Kiswari Amd.Keb, Central Metro, in 2025.

Discussion

Distribution of Mean Labor Pain Scores in the Intervention Group at BPM Kiswari Amd.Keb

The mean labor pain level among parturient women prior to the intervention—consisting of endorphin massage and deep breathing relaxation techniques—ranged from 6 to 9, with a mean of 7.29 and a standard deviation (SD) of 1.204. These findings indicate that before the intervention, the majority of the participants experienced labor pain categorized as severe. Following the intervention, labor pain levels decreased to a range of 4 to 6, with a mean of 5.00 and an SD of 0.784. This demonstrates that after the application of endorphin massage and deep breathing relaxation, labor pain intensity was reduced to the moderate category.

Efforts to enhance comfort and reduce pain in parturient women can be implemented through non-pharmacological methods. One such approach within complementary midwifery care is the utilization of relaxation and massage techniques (Katili et al., 2023). The administration of endorphin massage for parturient women is a relaxation technique designed to alleviate pain. Endorphins are endogenous compounds composed of approximately 30 amino acid units influenced by the regulation of catecholamines, adrenocorticotrophic hormone, and cortisol produced by the body to act as natural analgesics and stress reducers. This relaxation process also strengthens the emotional bond between spouses while preparing for childbirth. The physical touch involved in the massage promotes the release of oxytocin, and by increasing endorphin levels, it facilitates efficient neurotransmission, thereby elevating the pain threshold in parturient women. Endorphin massage, particularly when applied to the back area, has proven to be highly effective in reducing pain intensity and enhancing relaxation and comfort during the labor process (Khasanah & Sulistyawati, 2020).

Breathing relaxation techniques represent an effective method for pain reduction and contribute significantly to the labor process. These techniques not only assist in preventing postpartum complications but also play a critical role in maintaining sympathetic nervous system equilibrium during labor, thereby preventing excessive hemodynamic shifts. Furthermore, breathing relaxation is capable of mitigating anxiety and fear, while empowering the mother to adapt more effectively to the physiological pain experienced during the birthing process (Nida *et al.*, 2025).

Our results are corroborated by the study of Katili *et al.*, (2023) in the intervention group, the mean pain intensity prior to the administration of endorphin massage and deep breathing relaxation techniques was 7.77. Following a 10-minute combined intervention of endorphin massage and deep breathing relaxation, the mean pain intensity decreased to 3.54.

The researcher posits that the simultaneous application of these two techniques produces a synergistic effect, wherein endorphin massage alleviates pain through physiological mechanisms, while deep breathing relaxation reduces pain through psychological pathways. The combination of these interventions has proven effective in fostering maternal comfort, accelerating cervical dilation, and enhancing the overall positive birth experience. Consequently, these techniques are recommended as accessible, safe, and effective non-pharmacological interventions for integration into midwifery clinical practice.

Distribution of Mean Labor Pain Scores in the Control Group at BPM Kiswari Amd.Keb

The analysis reveals that the mean labor pain level in the control group during the pre-test ranged from 5 to 9, with a mean of 7.14 and a standard deviation (SD) of 1.292. These findings indicate that prior to the observation period, the majority of the participants experienced labor pain categorized as severe. Upon post-test observation without intervention, the pain levels remained in the 5 to 9 range, with a mean of 7.29 and an SD of 1.204. These results demonstrate that the control group experienced no significant reduction in pain; rather, the intensity remained stable or showed a slight increase.

The pain scales reported by the participants fell within the moderate to severe categories. Pain is classified as severe when a mother subjectively reports intense pain and objectively demonstrates an inability to follow complex instructions while still responding to clinical actions. In this state, the patient can localize the pain but is unable to effectively manage it through deep breathing or distraction techniques, and the pain begins to significantly impede maternal activity during the labor process (Uluhiyah *et al.*, 2023).

Labor pain is a subjective experience, meaning that the perception and preparation for pain sensations vary significantly from one individual to another. The emergence of pain is closely linked to specific receptors and stimuli. Participants in the control group utilized pain management strategies based on their personal habits. On average, respondents employed techniques such as walking, squatting, sitting, and abdominal or back massages. However, the application of these actions was inconsistent and non-standardized. Consequently, no significant reduction in pain was observed (Imelda *et al.*, 2023).

This is consistent with research conducted by Katili *et al.* (2023) in the control group, which did not receive the combination of endorphin massage and deep breathing relaxation, the mean pain intensity was 7.77. Upon reassessment after 10 minutes, the mean score remained high at 7.30.

The researcher posits that the lack of a significant reduction in pain levels within the control group is due to the absence of structured non-pharmacological interventions, such as endorphin massage and deep breathing relaxation. In this group, pain management was solely based on the participants' individual habits without proper technical guidance, resulting in very limited efficacy in pain reduction.

Physiologically, labor pain is caused by uterine contractions that compress the nerve fibers surrounding the cervix and the lower uterine segment. Without relaxation interventions or sensory stimulation like massage,

the body cannot optimally stimulate the release of endorphins; consequently, the pain threshold remains low, and the perception of pain is intensified. Furthermore, the tension and anxiety experienced by mothers during labor exacerbate pain perception, as increased sympathetic nervous system activity leads to muscle tension and decreased oxygen supply to the tissues.

The researcher also assumes that psychological factors, such as fear and a lack of support from healthcare providers or family, reinforce pain perception in the control group. In the absence of directed relaxation efforts, mothers tend to hold their breath, exhibit irregular breathing patterns, and experience fatigue more rapidly. This explains why the mean pain intensity in the control group remained high or even increased slightly following observation.

The Correlation Between Endorphin Massage and Deep Breathing Relaxation Techniques and Labor Pain Levels at BPM Kiswari Amd.Keb

Based on the results of the Mann-Whitney U test, a p-value of 0.000 ($p < 0.05$) was obtained, indicating a significant effect of endorphin massage and deep breathing relaxation techniques on labor pain at BPM Kiswari Amd.Keb, Central Metro, in 2025.

The Gate Control Theory of Pain provides a framework for understanding the variations in pain perception regarding the same stimulus. This theory explains that rubbing or massaging a painful area after injury can reduce pain because such actions stimulate activity in large-diameter nerve fibers. This stimulation effectively 'closes the gate' to the activity of small-diameter nerve fibers, which are responsible for transmitting pain signals. Furthermore, massage stimulates the descending control system to release endogenous opiates, specifically endorphins. Endorphins are protein molecules produced by the nervous system and other bodily tissues that work in conjunction with sedative receptors to alleviate pain. These substances consist of approximately 30 amino acid units that function as stress relievers, influencing markers such as corticotropin, cortisol, and catecholamines (Gunawan *et al.*, 2024).

Endorphins function by inhibiting pain impulse pathways that transmit signals to the brain, thereby reducing the volume of pain impulses successfully conveyed. Furthermore, endorphins exert a relaxant effect on the musculature, which can decrease the heart rate, induce a sense of tranquility, and serve as a psychological distraction from the pain as the sensation occurs (Gunawan *et al.*, 2024).

Relaxation is a technique designed to achieve a state of mental and physical repose through a gradual process of releasing muscular tension throughout the body. This technique is beneficial across various clinical conditions, including the management of pain, anxiety, sleep disorders, stress, and emotional tension. Relaxation assists the body in counterbalancing the fight-or-flight response by reducing respiratory rate, heart rate, metabolic activity, blood pressure, and energy consumption (Azizah *et al.*, 2021).

Breathing relaxation techniques represent an effective pain relief method that offers extensive benefits throughout the labor process. The implementation of these techniques can help prevent potential postpartum complications. During labor, breathing relaxation maintains the equilibrium of the sympathetic nervous system, keeping it in a state of homeostasis to prevent excessive hemodynamic surges. Furthermore, this technique mitigates anxiety and fear, empowering the mother to adapt more effectively to pain while promoting a calmer and more controlled birthing process (Azizah *et al.*, 2021).

This is consistent with the study conducted by Katili et al (2023) which found that endorphin massage and deep breathing relaxation techniques significantly influence labor pain during the active phase of the first stage of labor, with a p-value of 0.000.

The researcher posits that the combination of endorphin massage and deep breathing relaxation is effective in reducing pain intensity because both techniques work synergistically across both physiological and

psychological pathways. Physiologically, endorphin massage stimulates the release of endorphins, which act as the body's endogenous analgesics. These hormones bind to opiate receptors in the central nervous system, effectively blocking the transmission of pain impulses to the brain a process consistent with the Gate Control Theory of Pain thereby diminishing pain perception. Furthermore, the gentle tactile stimulation provided during the massage improves blood circulation, enhances tissue oxygenation, and promotes muscle relaxation, fostering a sense of comfort for the parturient woman.

Deep breathing relaxation also plays a critical role by decreasing sympathetic nervous system activity and increasing parasympathetic nervous system activity, which induces a calming and relaxed state. Controlled breathing helps lower levels of stress hormones, such as cortisol and catecholamines, which are known to exacerbate pain perception. In a more relaxed physical state, the mother is better able to manage uterine contractions and respond to pain more positively. The combination of these two techniques provides complementary physiological and psychological effects, making it a viable, effective, and safe non-pharmacological alternative that is easily implemented by midwives in clinical practice to alleviate pain during the active phase of the first stage of labor.

4. Conclusion

This study demonstrates that the combined application of endorphin massage and deep breathing relaxation techniques has a significant effect on reducing labor pain intensity. In the intervention group, pain levels decreased from the severe to the moderate category following treatment; conversely, the control group showed no significant changes, with pain levels remaining in the severe category. The statistical analysis, yielding a p-value of 0.000, confirms that the combination of endorphin massage and deep breathing relaxation is an effective non-pharmacological method for labor pain management. Based on these findings, it is recommended that these techniques be integrated into standard intrapartum care to enhance maternal comfort. The results of this study serve as a valuable reference for the development of midwifery clinical practices and academic curricula, particularly concerning non-pharmacological pain management. Future research should consider involving a larger sample size, expanding the study's geographic locations, and comparing these techniques with other non-pharmacological modalities to achieve more comprehensive results and higher generalizability.

5. Reference

- Azizah, N., Eka Rahmawati, V., Vitiasari Dessy, F., Ilmu Kesehatan, F., Pesantren Tinggi Darul, U., & Jombang, U. (2021). Teknik Relaksasi dalam Proses Persalinan : Literatur Review. *Jurnal EDUNursing*, 5(2), 134–141. <https://doi.org/10.26594/edunursing.v5i2.2942>
- Darmayanti, P. A. R., Ariani, N. K. S., & Santhi, W. T. (2022). effect of endorphin massage on reducing the intensity of childbirth pain Kala I in maternity mothers. *International Journal of Health Sciences*, 6(9), 2038–2045. <https://doi.org/10.53730/ijhs.v6nS9.12878>
- Gunawan, R. H., Widiawati, I., Ulfah, Y., Bidan, P. P., & Bandung, P. K. (2024). Efek Pijat Endorphin Untuk Mengurangi Rasa Nyeri Persalinan (Evidence Based Case Report). *Jurnal Kesehatan Siliwangi*, 4(3), 1239–1249. <https://doi.org/10.34011/jks.v4i3.2058>
- Haasyimiyah, D. N., Kumalasari, D., & Yulianti, R. (2025). Pengaruh Teknik Pernafasan Dalam Mengurangi Nyeri Persalinan. *Jurnal Kebidanan Dan Kesehatan*, 3(1), 1–12. <https://doi.org/10.70683/jkk.v3i1.33>
- Imelda, D. M., Yulita, N., & Eva, N. (2023). Pengaruh Pijat Endorphine Terhadap Intensitas Penurunan Nyeri Pada Ibu bersalin kala I Di PMB Ny. N Cileungsi Bogor. *Jurnal Ilmiah Kesehatan Dan Kebidanan (JKK)*, 13(2), 205–224. <https://www.e-journal.mrhj.ac.id/Jkk/article/view/277>
- Katili, D. N. O., Djunaid, U., Arriza Dwi Melani, N., Yunus, Y., Harisa, K., Studi Kebidanan, P., & Ilmu The Effects of Endorphin Massage and Deep Breathing Relaxation Techniques on Labor Pain at the Kiswari Private Obstetric Clinic, Central Metro. Iis Tri Utami et.al

- Kesehatan, F. (2023). Pengaruh Teknik Massage Endorphin dan Teknik Relaksasi Nafas dalam Terhadap Nyeri Persalinan The Effect of Endorphin Massage Techniques and Deep Breath Relaxation Techniques on Labor Pain. *Health Information : Jurnal Penelitian*, 15(2), 2622–5905. <https://doi.org/10.36990/hijp.v15i2.1301>
- Khasanah, N. A., & Sulistyawati, W. (2020). Pengaruh Endorphin Massage Terhadap Intensitas Nyeri Pada Ibu Bersalin. *Journal for Quality in Women's Health*, 3(1), 15–21. <https://doi.org/10.30994/jqwh.v3i1.43>
- Maryuni, M. (2020). Hubungan Karakteristik Ibu Bersalin dengan Nyeri Persalinan. *Journal of Health Science and Physiotherapy*, 2(1), 116–122. <https://doi.org/10.35893/jhsp.v2i1.42>
- Miles, M. B., & Huberman, A. M. (1984). Drawing Valid Meaning from Qualitative Data: Toward a Shared Craft. *Educational Researcher*, 13(5), 20–30. <https://doi.org/10.3102/0013189X013005020>
- Sartika, S., & Noorlinda, N. (2025). Reducing Labor Pain through Endorphin Massage: Clinical Evidence from Indonesia. *Journal of Current Health Sciences*, 5(3), 169–176. <https://doi.org/10.47679/jchs.2025126>
- Siregar, A. B. M. O., & Ermiami, E. (2023). Asuhan Keperawatan dengan Terapi Napas Dalam dan Pijat Oksitosin terhadap Penurunan Intensitas Nyeri pada Pasien Post-Sectio Caesarea: Studi Kasus. *SENTRI: Jurnal Riset Ilmiah*, 2(7), 2656–2664. <https://doi.org/10.55681/sentri.v2i7.1177>
- Sukmasary, F. (2025). Pengaruh teknik relaksasi nafas dalam terhadap nyeri ibu hamil menjelang persalinan. *Journal of Midwifery Care*, 5(02), 325–333. <https://doi.org/10.34305/jmc.v5i02.1642>
- Sunarsih, T. (2020). Asuhan Kebidanan Continuity of Care di PMB Sukani Edi Munggur Srimartani Piyungan Bantul. *Midwifery Journal: Jurnal Kebidanan UM. Mataram*, 5(1), 39. <https://doi.org/10.31764/mj.v5i1.952>
- Suyanto, S. R., & Sulistiyah, S. (2025). Pengaruh Massase Effleurage Terhadap Pengurangan Rasa Nyeri Ibu Bersalin Kala I Fase Aktif. *Journal of Innovative and Creativity (Joecy)*, 5(2), 9082–9088. <https://doi.org/10.31004/joecy.v5i2.1393>
- Uluhiyah, W. O. S. S. N., Ni'amah, S., & Suwi'i. (2023). Pengaruh Massage Endorphin Terhadap Tingkat Nyeri Ibu Bersalin Pada Kala I. *Cendekia Medika: Jurnal Stikes Al-Ma'arif Baturaja*, 8(2), 265–272. <https://doi.org/10.52235/cendekiamedika.v8i2.231>
- Wilson, C. R., Pacheco, J., & ten Hoop-Bender, P. (2023). Person-centered Women's Health and Maternity Care. In *Person Centered Medicine* (pp. 355–365). Springer International Publishing. https://doi.org/10.1007/978-3-031-17650-0_21
- World Health Organization. (2019). *WHO recommendations: Intrapartum care for a positive childbirth experience*. WHO Press.