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Massage Effectiveness In Reduce Labor Pain and Anxiety: Literature Review

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Abstract
This research was conducted to determine the effectiveness of massage in reducing labor pain and anxiety during childbirth. Massage therapy aims to decrease anxiety by lowering cortisol levels, while also alleviating pain in the legs, back, muscles, and joints. A literature review method was employed, using the PICO framework to search relevant studies from databases such as Google Scholar and PubMed. A total of 89 journals were reviewed based on inclusion and exclusion criteria, focusing on pregnant women experiencing labor pain and anxiety. The results showed that massage, administered 2 to 3 times a week with a duration of 40 minutes per session, significantly reduced pain and anxiety levels ($P < 0.001$). Various massage techniques, including Swedish massage, antenatal massage, and intrapartum massage, demonstrated effectiveness in reducing pain intensity and enhancing emotional well-being. The findings highlight that massage therapy, as a non-pharmacological intervention, can serve as a safe, cost-effective, and beneficial alternative for pain and anxiety management during labor. This study provides valuable insights for healthcare professionals in optimizing maternal care and improving childbirth experiences.

Keywords: labor pain, anxiet, massage

INTRODUCTION

Childbirth is considered a period of suffering in a woman's life, where she may experience the effects of sexual satisfaction and postpartum marriage. Labor pain involves physical and psychological elements such as uterine contractions, tension, fear, anxiety, and sensations of helplessness and loss of control (Karaduman & Akköz Çevik, 2020). Current medications for labor pain include pharmacological and non-pharmacological interventions. The most common pharmacological interventions include nitrous oxide inhalation, narcotic analgesic injections (e.g. petidine), and epidural analgesia. However, this method is associated with side effects such as nausea and vomiting, the first and second stages of labor are longer, hypotension, motor blockade, fever, and urine retention; They can also cause neonatal respiratory depression and newborn drowsiness that affects breastfeeding. Therefore, women prefer safer and simpler non-pharmacological pain relievers (Chang et al., 2020).

A well-known non-pharmacological remedy is massage, which can relieve pain to the application site, along with overall psychological relaxation. The pressure exerted during massage is thought to block the transmission of pain impulses to the brain, while stimulating the local release of endorphins (Eskandari et al., 2022). Randomized controlled trials on intrapartum massage have been conducted in various countries over the past two decades. However, there have been conflicting findings about beneficial effects (i.e., reductions in pain scores or pharmacological uses. The effect of massage to relieve pain during childbirth has been controversial. This lesson investigates the efficacy of a program combining intrapartum massage, controlled breathing, and visualization for non-pharmacological pain relief during labor. Intensive pain that lasts for hours (Gallo et al., 2018).

Ineffective

Pain management of labor can have a negative impact

life experience for a woman, which may be negative In contrast to the popular belief that "pain is obvious and inevitable during labor and must be tolerated", today the elimination of labor pain has been proposed as a new approach. A pleasant and pain-reducing childbirth experience with massage therapy is one of the solutions.

Massage is a systematic touch and gentle manipulation of body tissues that is increasingly being used as an adjunct therapy to relieve stress and to promote relaxation and well-being as a pharmacological alternative or an invasive form of analgesia during childbirth. Several studies have shown that massage reduces labor pain (Lai et al., 2022).

Pawale and Salunkhe in 2020 reported that back massage was effective in reducing pain in the first stage. Childbirth in primipara mothers. Baljon et al. in 2022 stated that massage reduces the intensity of labor pain and anxiety. In another study, the combination of pelvic shakes and back massage had a significant effect on pain and duration of labor. Performing a massage is also accompanied by fewer requests for epidural analgesia., Furthermore, performing a massage to relieve labor pain and applying this knowledge is an expensive and time-consuming procedure for the organization (Hall et al., 2020).

Today, knowledge management is a more important category than knowledge itself, and organizations are trying to build on that and try to explain how to turn knowledge into skills. Therefore, due to resource and manpower limitations, the application of the most effective masase, especially for tender populations such as pregnant women seems to be very important (Shahbazzadegan & Nikjou, 2022).

Anxiety occurs in stressful situations such as childbirth that can affect the pain and labor process. Therefore, anxiety reduction is also important. The literature supports the use of massage in pregnancy and labor; However, the evidence has been improved over the past 30 years. Massage has been shown to be beneficial for pregnant women. Determining the most effective time for massage to control labor pain is important for proper management. There are several literature reviews or systematic reviews that discuss the effectiveness of massage in reducing labor pain and anxiety (Joseph & Fernandes, 2013).

Labor pain is one of the most significant challenges during childbirth, often leading to heightened anxiety and fear. While pharmacological interventions are commonly used to manage pain, they may come with side effects and potential risks for both the mother and baby (Mortazavi et al., 2012). This has prompted many healthcare professionals to explore non-pharmacological

approaches, such as massage therapy, to provide effective pain relief without medication. Massage, through techniques like effleurage, kneading, and acupressure, has shown potential to improve maternal comfort and reduce anxiety levels, creating a more positive birth experience (Lai et al., 2022).

In addition to alleviating pain, massage therapy has also been studied for its effects on maternal emotional well-being. Anxiety during labor can prolong the duration of labor, increase stress hormones, and hinder the progress of childbirth. By promoting relaxation, massage is thought to reduce cortisol levels, lower heart rate, and induce a sense of calm in the laboring woman. Given the complexity of labor pain, which encompasses both physical and emotional components, effective pain management strategies that also address anxiety are essential for improving maternal outcomes and satisfaction with the childbirth process (Foster, 2023).

Moreover, the cultural shift toward patient-centered care in childbirth emphasizes the importance of maternal comfort and empowerment during labor (Afiyah, 2017). With growing interest in complementary therapies, such as massage, there is a need for further investigation into their effectiveness. The results of previous studies have shown promising outcomes, but there is a lack of consensus on the optimal techniques, duration, and frequency of massage that would provide the best results for labor pain and anxiety reduction. This literature review aims to address these gaps by synthesizing the current evidence on the effectiveness of massage therapy for improving maternal well-being during labor.

Research by Lee et al. (2018) aimed to assess the effectiveness of massage in reducing labor pain and anxiety in a cohort of pregnant women undergoing natural childbirth. The study found that women who received massage during the first and second stages of labor reported lower pain scores and experienced significant reductions in anxiety levels compared to those who did not receive any massage. The study concluded that massage, as a non-pharmacological intervention, could be a valuable option for improving maternal comfort during labor.

A study by Zhang et al. (2019) explored the use of massage therapy specifically targeting the lower back and abdomen in women with moderate to severe labor pain. Results showed a marked improvement in pain reduction and a decrease in anxiety after regular massage sessions. The research highlighted that massage not only helped manage pain but also contributed to emotional stability, fostering a sense of control over the labor process, which is critical for a positive birthing experience.

In a randomized controlled trial by Chen and Li (2020), the impact of massage on pain intensity and anxiety levels during labor was analyzed across three groups: those receiving massage, those receiving traditional pain relief methods, and a control group. The results indicated that massage therapy was equally effective in reducing pain and anxiety when compared to pharmaceutical pain relief, with no adverse effects. This study demonstrated that massage could serve as an effective, safe alternative to pharmacological pain management during labor.

Although several studies have explored the benefits of massage therapy for reducing labor pain and anxiety, there remains a lack of consistency in the protocols used, such as the type of massage techniques, frequency, and duration of treatments. Additionally, there is limited research on the long-term effects of massage on maternal health post-labor. Many studies focus only on short-term outcomes, without assessing how massage might influence overall maternal recovery or postpartum well-being.

This literature review seeks to fill the gaps in existing research by providing a comprehensive synthesis of studies that evaluate both the immediate and long-term effects of massage therapy on labor pain and anxiety. Unlike previous studies that focus solely on one aspect of labor, this review aims to integrate findings related to various massage techniques, their optimal frequency, and their impact on both physical pain and psychological well-being. The novelty of this study lies in its holistic approach to understanding how massage can enhance the childbirth experience.

The main objective of this research is to determine the overall effectiveness of massage therapy in reducing labor pain and anxiety, focusing on both short-term and long-term outcomes. By analyzing the results of various studies, this review will provide valuable insights into the most effective massage techniques and protocols for laboring women. The findings will contribute to the growing body of knowledge on non-pharmacological pain management options and offer healthcare professionals evidence-based guidance on integrating massage into prenatal care. The ultimate benefit of this research is to improve maternal comfort and satisfaction during labor, enhancing the overall birth experience and promoting better emotional and physical recovery.

METHODS

This study uses a literature review approach. Literature Review is a systematic method that summarizes and evaluates knowledge or practice on a specific subject. The research questions included the format of PICO: (P = Population) 233 and 246 women, (I = intervention) masssage, (C = Comparison), (O = Outcome) Effects of massage for pain relief during developmental delivery. The research journal articles reviewed are limited by inclusion and exclusion criteria, with journal retrieval having a time limit for the last 10 years, namely 2013-2022. Articles will be reviewed if they have met the following inclusion criteria: (i) the study subjects were 233 and 246 pregnant women.

Based on journal databases such as PubMed, APTA Journal, ScienceDirect, scimago, openaccesjournal and if the journal article is locked, the author downloads it to the Sci-Hub database using the predetermined keywords "Effectiveness of Massage in Reducing Pain and Anxiety in Childbirth: Literature Riview " The research article is saved in pdf form and selected based on the inclusion and exclusion criteria set by the author and goes through several processes such as screening, eligibility and inclusion. The author does not use original data from previous researchers, but the data is extracted based on the abstract, results and conclusion of the article.

The measuring instrument uses

1. **VASE**

   The Visual Analogue Scale (VAS) according to Reips & Funke (2008) is a psychometric scale response that can be used in questionnaires, and is a measurement instrument in subjective characteristics. VAS was introduced by the American Psychological Association and is commonly used in the world of medicine and psychology, but it is possible to use it for other purposes.

2. **HADS**

   Hospital Anxiety and Depression Scale (HADS)

Massage Techniques

In the journal that was researched to reduce pain and anxiety in pregnant women, 3 types of massage were used*, Swedish massage, Antenatal massage, and Intrapartum massage*.

1. *Swedish Massage*

It is a type of *massage* to relieve muscle tension in pregnant women. Especially for muscle tension in the shoulders, neck, and lower back.

There are several *Swedish Massage techniques*, namely:

a) *Effleurage Massage* is a massage technique in which the palms exert increased pressure on the upper body through repetitive circular movements.

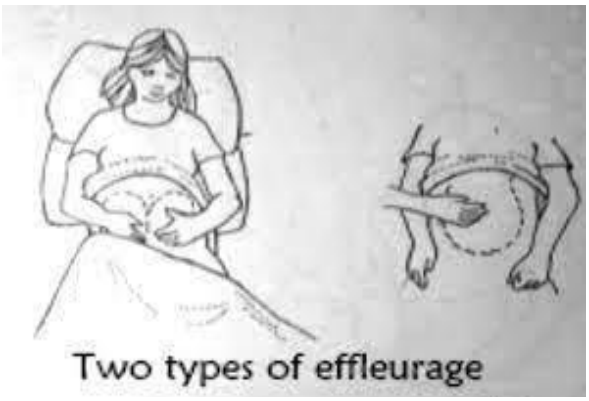

Figure 1. *Effleurage Massage*

b) *Petrissage Massage* It is done by pressing or massaging the muscles and tissues that support them, pushing the muscles down and then pressing them, that is, lifting them as if breaking a muscle.

Figure 2. *Petrissage Massage*

c) *Vibration Massage* is a vibration massage technique, the direction of vibration to the tissue so that the tissue vibrates with longitudinal waves. The purpose of this massage is to relieve pain

Figure 3. *Vibration Massage*

2. *Antenatal massage*

This massage (massage for pregnant women) is a *massage* that is done on pregnant women and a type of *massage* Adaptation to changes in the mother's body, for example pain in the shoulders or pain in the shoulders and back, then the part will be given *a more intense* massage.

Figure 4. *Antenatal Massage*

3. *Intrapartum massage*

the area of tissue between your vagina and anus (the back). It is connected to the muscles of the mother's pelvic floor. The pelvic floor muscles support the mother's pelvic organs such as the bladder and intestines

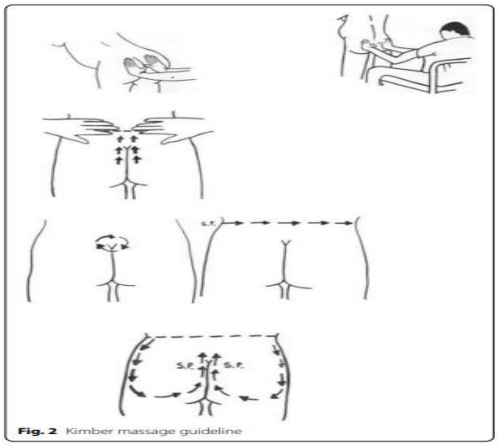

Figure 5. *Intrapartum massage*

RESULTS AND DISCUSSION

Result

Of the 10 journals, only 8 journals were researched after going through the stages of screening, eligibility and inclusion. Massage therapy can reduce aches and pains and anxiety in hamis mothers before delivery. Based on the results of the article that has been obtained and analyzed by the author, the result is that *Massage* Therapy has a significant positive impact on pain and anxiety in pregnant women.

Table 1 Study characteristics I

Reviewer	Participant		Intervention		Measurement	Results	Design Study
	Intervention group	Control group	Experimental group	Control group			
Eskandari et al.,2022	n=53	n=51	Swedish Massage	Swedish Massage	VASE	P < 0.001	RCT
Shahbazzadegan and Nikjou.,2022	n=30	n=30	Control Group	Massage Group	questionnaire	P < 0.0001	RCT
Margaret K.W. Wong.,2021	n=233	n=246	Massage group	Control Group	Analgesic	P < 0.001	RCT
Chit Ying Lai.,2022	n=212	n=212	Antenatal massage	Intrapartum massage	Analgesic	P=0.04	RCT
Semra Akköz Çevik., 2018	n=30	n=30	No massage intervention	No massage intervention	VASE	P < 0.5	RCT
Reeja Mariam Joseph, and Philomena Fernandes.,2020	n=20	n=20	Pre-test	Post-test	VASE	P = 0.01	experimental
Firouzbakht M.,2015	n=132	n=63					

Based on a literature review study, the author stated that the average sample results of 900 samples were obtained with a gestational age between 37-42 weeks, most of the literature used an RCT $p<0.05$

Table 2. Characteristics of Study II

Reviewer	Type of Intervention	Theraputic Design				Duration Theraphy
		F	I	T	T	
Eskandari et al.,2022	*Swedish massage*	1x/week	-	Chamomile Massage Oil	10 minutes	A week in a row after childbirth
Shahbazzadegan and Nikjou.,2022	*cervical dilatation*	-	-	-	-	-
Margaret K.W. Wong.,2021	*Intrapartum massage*	1x	According to the patient's circumstances	AM	40 minutes	Once before delivery
Chit Ying Lai.,2022	*Intrapartum Massage and Antenatal Massage*	3 days	According to the patient's circumstances	AM	15 minutes	3 days in a row
Semra Akköz Çevik., 2018	*Massage to the sacral region*	1 x a day	According to the patient's condition	-	30 minutes	Massage at each phase before delivery 30-minute massage
Reeja Mariam Joseph, and Philomena Fernandes.,2020	*Back Massage*	3x	According to the patient's circumstances	Jasmine Oil	10 minutes	3 hours after
Firouzbakht M.,2015	-	-	-	-	-	-
Rubneide Barreto Silva Gallo.,2018	Dilation	3 days	According to the patient's circumstances	AM	40 minutes	3 days

Based on the research that has been conducted, research has found that there are several types of *massage* that can be given to reduce anxiety and reduce pain such as *Swedish massage, Intrapartum Massage and Antenatal Massage* with a frequency of 2 to 3 x/week with a duration of 40 minutes for 4 weeks.

Table 3. Mean os Study Characteristics

Reviewer	Measurement	Intervention group		Control group		Significant
		Pre	Post	Pre	Post	
Eskandari et al.,2022	VASE	5.28±0.95	21.98±3.69	May 25±1.05	22.82±3.48	P < 0.001
Shahbazzadegan and Nikjou.,2022	questionnaire	4.79±1.30	24.63±4.08	5.00±1.51	23.19±4.86	P < 0.0001
Margaret K.W. Wong.,2021	Analgesic	30.7 ± 3.8	31.3 ± 3.7	158.0 ± 5.5	158.6 ± 5.6	P < 0.001
Chit Ying Lai.,2022	Analgesic	31.2 (3.8)	31.3 (3.6)	158.9 (5.7)	157.9 (5.2)	P=0.04
Semra Akköz Çevik., 2018	VASE	3,57+ 1.43	4.67+ 1.37	28.07+2.96	39.57+4.17	P < 0.5
Reeja Mariam Joseph, and Philomena Fernandes.,2020	VASE	134.4	138.4	134.4	136.8	P = 0.01

Firouzbakht M.,2015	VAS & HADS	22 (36.1)	39 (63.9)	66 (50)	66 (50)	P=0.01
Rubneide Barreto Silva Gallo.,2018	VASE	52 (20)	72 (22)	68 (20)	89 (21)	0,01

Based on the table above, when compared to the control group, the intervention group showed a good and significant improvement.

Discussion

A Review literature study with an average sample reduced antenatal pain in pregnant women. The study (Eskandari et al., 2022) gave a Swedish massage, the intervention was given 1x/week for 10 minutes, the P-value <0 P=0.04.> 0.05, the study (Semra Akköz Çevik., 2018) with a P value < 0.5, a study (Reeja Mariam Joseph and Philomena Fernandes., 2020) with P=0.01 and a study (Firouzbakht M., 2015) with P=0.01 did not provide information about the patient's intervention.

And in the last study (Firouzbakht M., 2015) they were trained with a Swiss ball with a cervical dilation of 4-5 cm; Lumbosacral massage with an extension of 5-6 cm; and a hot bath >7 cm for 3 days depending on the patient's condition and lasts for 40 minutes.

In this randomized controlled clinical trial, a 7 cm cervical opening was found to have cervical dilation suitable for massage and reduce labor pain. According to a systematic review, research shows that massage is effective in reducing labor pain. In a similar study, Gonenc and Terzioglu found that the dual use of massage and acupressure was effective in relieving labor pain. Türkmen and Oran reported that the average pain score in the heat treatment group (4.56 ± 0.67) for cervical dilation of 4-5 cm was significantly lower than that of the massage group. (5.03 ± 1.06) and the control group (5.23 ± 0.72) ($p<0.05$). According to the results of this study, the average pain level in the heat treatment group (6.80 ± 0.7) and the massage group (7.30 ± 0.8) was significantly lower than in the control group (7.70 ± 0.8). <0.001) with cervical dilation 6-7 cm. Erdogan et al. conducted a study to show the effect of back massage on labor pain and maternal satisfaction in 62 samples in Turkey. Of these, 31 patients were examined in the massage group and 31 patients in the control group.

Massage is performed in three latent, active and transitional phases, and pain is evaluated three times according to visual criteria. The results of the study showed that lumbar massage had a significant effect on the reduction of labor pain and maternal satisfaction. In another study, Mohamed et al. Evaluation of the effects of back massage and work relaxation techniques in Egypt. The study involved 50 pregnant women in two study and control groups. Even after being massaged. This was followed by prenatal massage training on the use *of intrapartum massage* and its relationship with the use of pharmacological analgesics.

The results showed that adherence to prenatal massage was positively correlated with intrapartum massage, which in turn was associated with a decrease in pethidine or epidural pain. However, simply following a prenatal massage is not associated with the use of these pain relievers during labor. It was found that women who gave birth for 15 minutes, 3 days a week from the 36th week of pregnancy, were more massaged during labor.

About half of the women in the study successfully adhered to childbirth, which was comparable to a previous small study in which adherence to 10-minute exercise 3 days a week was similar. About 50% of women give birth on the 21st day after the massage session, and their

commitment remains 40% or more during the 21st day. According to research, starting massage exercises a few weeks before giving birth gives couples the opportunity to get to know the use of massage techniques. More research is needed to determine the optimal start time for optimal prenatal massage practice during labor.

CONCLUSION

Giving massage and dilation to pregnant women can help pregnant women in reducing aches or pains and anxiety before childbirth with Swedish massage, intrapartum massage and Antenatal massage with a frequency of 2 to 3 x/week with a duration of 40 minutes for 4 weeks, can help to reduce pain and reduce anxiety.

BIBLIOGRAPHY

Afiyah, R. K. (2017). Effectiveness of endorphin massage against anxiety the face of labor on mother primigravida in the region of Clinics Jagir Surabaya. *PROCEEDING SURABAYA INTERNATIONAL HEALTH CONFERENCE 2017*, *1*(1).

Chang, M., Wang, S., & Chen, C. (2020). Effects of massage on pain and anxiety during labour: a randomized controlled trial in Taiwan. *Journal of advanced nursing*, *38*(1), 68–73.

Eskandari, F., Mousavi, P., Valiani, M., Ghanbari, S., & Iravani, M. (2022). A comparison of the effect of Swedish massage with and without chamomile oil on labor outcomes and maternal satisfaction of the childbirth process: a randomized controlled trial. *European Journal of Medical Research*, *27*(1), 266.

Foster, M. C. (2023). *Evaluation of Recovery Level and Surgical Site Infection for Hip Replacement Surgeries*. Walden University.

Gallo, R. B. S., Santana, L. S., Marcolin, A. C., Duarte, G., & Quintana, S. M. (2018). Sequential application of non-pharmacological interventions reduces the severity of labour pain, delays use of pharmacological analgesia, and improves some obstetric outcomes: a randomised trial. *Journal of physiotherapy*, *64*(1), 33–40.

Hall, H. G., Cant, R., Munk, N., Carr, B., Tremayne, A., Weller, C., Fogarty, S., & Lauche, R. (2020). The effectiveness of massage for reducing pregnant women's anxiety and depression; systematic review and meta-analysis. *Midwifery*, *90*, 102818.

Joseph, R. M., & Fernandes, P. (2013). Effectiveness of jasmine oil massage on reduction of labor pain among primigravida mothers. *Journal of Health and Allied Sciences NU*, *3*(04), 104–107.

Karaduman, S., & Akköz Çevik, S. (2020). The effect of sacral massage on labor pain and anxiety: A randomized controlled trial. *Japan Journal of Nursing Science*, *17*(1), e12272.

Lai, C. Y., Wong, M. K. W., Tong, W. H., Lau, K. Y., Chu, S. Y., Tam, A. M. L., Hui, L. L., Lao, T. T. H., & Leung, T. Y. (2022). The impact of antenatal massage practice on intrapartum massage application and their associations with the use of analgesics during labour: Sub-analysis of a randomised control trial. *BMC Pregnancy and Childbirth*, *22*(1), 420.

Mortazavi, S. H., Khaki, S., Moradi, R., Heidari, K., & Vasegh Rahimparvar, S. F. (2012). Effects of massage therapy and presence of attendant on pain, anxiety and satisfaction during labor. *Archives of Gynecology and Obstetrics*, *286*, 19–23.

Shahbazzadegan, S., & Nikjou, R. (2022). The most appropriate cervical dilatation for massage to reduce labor pain and anxiety: a randomized clinical trial. *BMC women's health*, *22*(1), 282.

Teitelman, A. M., Kim, S. K., Waas, R., DeSenna, A., & Duncan, R. (2018). Development of the NowIKnow mobile application to promote completion of HPV vaccine series among young adult women. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, *47*(6), 844–852.

Wang, T., Kang, X., Zhao, A., He, L., Liu, Z., & Liu, F. (2020). Low-dose aspirin improves endometrial receptivity in the midluteal phase in unexplained recurrent pregnancy loss. *International Journal of Gynecology & Obstetrics*, *150*(1), 77–82.

Zhang, L., Liu, J., & Wang, H. (2019). The effects of targeted massage therapy on lower back and abdomen pain during labor: A randomized trial. https://doi.org/10.1016/j.jpm.2018.12.004. *Journal of Perinatal Medicine*, *47*(4), 385–393.