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Endorphin Massage and Deep Back Massage for Pain During the Active Phase I of Maternity Mothers

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A B S T R A C T

Excessive pain will cause anxiety which can trigger the production of the hormone progstatglandin which can cause stress and affect the body's ability to withstand pain. Purpose: to assess Endorphin Massage and Deep Back Massage on Pain Intensity during the Active Phase I in Maternity. Methods: This is a quasi-experimental study using the two groups post test only design method. Samples were all mothers giving birth with accidental sampling technique as many as 20 people in the experimental group and 20 people in the control group for 6 months. Data analysis consisted of univariate and bivariate with Independent t-test. Results: The results showed that the intensity of labor pain in the group given Endorphin Massage and Deep Back Massage for mothers in labor showed a mild pain scale with a mean value of 4.95. The intensity of labor pain in the group that was not given Endorphin Massage and Deep Back Massage in laboring women showed a scale of severe pain with a mean value of 7.45. Conclusion: Endorphin massage and back deep massage have an effect on labor pain in the first stage of the active phase of labor with a p-value <0.0001

Kata kunci:

Massage Endhorphin
Back deep massage
Nyeri Persalinan

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A B S T R A K

Nyeri yang berlebihan akan menimbulkan rasa cemas yang dapat memicu produksi hormone progstatglandin yang dapat menyebabkan stress dan mempengaruhi kemampuan tubuh menahan rasa nyeri. Tujuan: untuk menilai Massage Endorphin Dan Deep Back Massage Terhadap Intensitas Nyeri Kala I Fase Aktif Pada Ibu Bersalin. Metode: Penelitian ini Quasi experiment dengan metode two groups post test only design. Sampel adalah semua ibu bersalin dengan tehnik accidental sampling sebanyak 20 orang kelompok eksperimen dan kontrol 20 orang selama 6 bulan. Analisis data terdiri dari univariat dan bivariat dengan Independent t-test. Hasil: Hasil penelitian menunjukkan bahwa Intensitas nyeri persalinan pada kelompok yang diberikan Massage Endorphin Dan Deep Back Massage pada ibu bersalin menunjukkan skala nyeri ringan dengan nilai mean 4,95. Intensitas nyeri persalinan pada kelompok yang tidak diberikan Massage Endorphin Dan Deep Back Massage pada ibu bersalin menunjukkan skala nyeri berat dengan nilai mean 7,45. Kesimpulan: Massage endorphin dan back deep massage berpengaruh terhadap nyeri persalinan kala I fase aktif ibu bersalin dengan nilai p-value < 0,0001

INTRODUCTION

Childbirth is the process of opening and thinning the cervix and the fetus descends into the birth canal and then ends with the expulsion of a baby who is full months or almost full months or can live outside the womb followed by expulsion *placenta* and fetal membranes from the mother's body through the birth canal or with assistance, or without help (self-power). Childbirth is considered normal if the process occurs at term of gestation without any complications (Marmi, 2012). Childbirth is considered normal if the process occurs at term of gestation without any complications (Meihartati & Mariana, 2018)

Handling and monitoring of labor pain, especially during the first stage of the active phase is very important, because this is a determining point whether a woman in labor can have a normal delivery or ends a determining point whether a woman in labor can have a normal delivery or an action is terminated due to complications caused very intense pain. Considering that the impact of pain is quite significant for the mother and baby, efforts must be made to reduce the pain (liva Maita, 2013)

Pain in labor generally feels great, only 2-4% of mothers experience mild pain during labor. The fear of pregnant women about labor pain or the inability of pregnant women to endure and accept labor pain during labor that they go through will have an impact on reducing the success of normal delivery. One of the natural techniques to relieve pain is by doing Deep Massage and Counterpressure Maassage (Susanti et al., 2019)

Based on research (Nuraini et al., 2019) with the title the effect of the back effleurage massage technique on reducing labor pain in the first stage at the Kurnia maternity clinic, Delitua sub-district, Deli Serdang district, states that there is a significant effect between back effleurage massage technique on confinement of labor pain first stage (Nuraini et al., 2019)

World Health Organization (WHO) estimates that every year there are 210 million pregnancies worldwide, and 20 million women experience pain during childbirth. In childbirth, there is often anxiety, panic, and fear of the extraordinary pain felt by the mother which can interfere with the delivery process and result in a prolonged labor process which causes obstructed labor (WHO, 2014). The birth rate in Indonesia is quite high. Based on a survey conducted by WHO, 2016 statistical data recorded countries with the highest number of mothers giving birth, namely India (303,600 people), Pakistan with the number of mothers giving birth (72,100 people), Utopia (32,700 people) and Indonesia was in 6th place with the number of mothers maternity is (32,400 people).

The 2014 Indonesian Demographic and Health Survey noted that prolonged labor (42.96%) was the main cause of maternal and perinatal death followed by bleeding (35.26%), and eclampsia (16.44%). The survey results found that prolonged labor can cause emergencies in mothers and babies. In the mother there can be bleeding, shock, and death while in the baby there can be fetal distress, asphyxia and caput (The, 2016)

Data recorded by the *World Health Organization* (WHO), Indonesia ranks first in the MMR in Southeast Asia, namely 214 per 100,000 live births; second is the Philippines at 170 per 100,000 live births; third is Vietnam 160 per 100,000 live births; fourth is Thailand which is 44 per 100,000 live births; fifth is Brunei Darussalam with a rate of 60 per 100,000 live births; and sixth is Malaysia with 39 per 100,000 live births. Factors that cause maternal death are due to complications during and after delivery, including bleeding, infection, high blood pressure, complications of childbirth and unsafe abortion (WHO, 2014)

Per district/city. According to district/city health profile data in 2017, the number of under-five deaths was 1,123 people, lower than in 2016, namely 1,219 deaths. When converted to the Under-five Mortality Rate, the AKABA of North Sumatra Province in 2017 is 8/1,000 KH. This low number may be due to differences in the recording of reported death cases at health service facilities and cases of death that occur outside services or in the community (Badan Pusat Statistik, 2017)

Based on the 2017 district/city health profile report, the number of deaths Mothers recorded 205 deaths, lower than the data recorded in 2016, namely 239 deaths. The highest number of maternal deaths in 2017 was recorded in Labuhanbatu Regency and Deli Serdang Regency with 15 deaths, followed by Langkat Regency with 13 deaths and Batubara Regency with 11 deaths. The lowest number of deaths in 2017 was recorded in the cities of Pematangsiantar and Gunungsitoli with 1 death each. If the number of maternal deaths is converted to the maternal mortality rate, the MMR in North Sumatra is 85/100,000 live births (*Profil Kesehatan Provinsi Sumatera Utara*, 2017)

In the first stage of labour, the pain that is felt is visceral in nature arising from uterine contractions and cervical dilatation which is innervated by sympathetic afferents and transmitted to the spinal cord in the Thoracal segment 10 Lumbar 1 through the delta nerve fibers and C nerve fibers originating from the lateral wall and fundus uterus. Pain will increase with isometric contractions in the uterus against the barriers by the cervix/uterus and perineum (Maryunani, 2015). The Japanese article says that 77.8% of women in France experience labor pain, 61% in England, 26% in Norway while in Japan the rate of labor pain is only 5.2% (Claus et al., 2017) Handling and monitoring of labor pain, especially in the 1st stage the active phase is very important, because it is a determinant of whether a birthing mother can have a normal delivery or end with an action because there are complications caused by severe pain. 15% of birth mothers give birth with mild pain, 35% of deliveries are accompanied by moderate pain, 30% of deliveries are accompanied by severe pain and 20% of deliveries with very severe pain (Meihartati & Mariana, 2018)

There are several methods to deal with labor pain, including pharmacological and non-pharmacological methods. There is some research evidence to support the efficacy of the choice of pharmacological methods in the management of labor pain, but the systematic overview also highlights that there is an association of the administration of pharmacological methods with a number of side effects (Jones et al., 2011)

Methods *pharmacological*methods *non-pharmacological* are effective without adverse side effects and can increase satisfaction during labor because mothers can control their feelings and strength (Makvandi, 2016) These methods include hot and cold therapy, touch therapy, massage, reflexology, relaxation, dancing, sugar-free gum, trans or subcutaneous nerve stimulation, water therapy, using *birth ball* music therapy, acupressure and aromatherapy (Maryunani, 2015). These methods include hot and cold therapy, touch therapy, massage, reflexology, relaxation, dancing, sugar-free gum, trans or subcutaneous nerve stimulation, water therapy, using *birth ball* music therapy, acupressure and aromatherapy (Makvandi, 2016).

To reduce pain in labor, but there is a method that we can use is massage. Massage is one of *the gate control theory*,

using massage can relieve pain and increase blood flow to all tissues.techniques *massage* are commonly used for mothers in labor to reduce pain, namely: *Deep back massage, Effelurage massage, Counter Pressure Method, Abdominal Lifting* (Kuswandi, 2012).

Light touch massage is used in labor because when endorphins are released, catecholamines do not come out. This technique is very simple, but effective. This is an action that needs to be taken by birth attendants to provide comfort for mothers who give birth. The formation of endorphins produced by the application of light touch massage helps the mother to feel calm and comfortable, both before and during labour. Endorphin Massage which is a touch therapy, light massage which is important enough to be given during the birth process. This can stimulate the body to release endorphins which are pain relievers and can create feelings of comfort. This kind of relaxation technique can help a lot in reducing pain and emotional stress during the birth process without the need to use anesthetic because God actually has prepared everything in the mother's body (Lanny Kuswandi, 2014)

Research by (Adi Anton, 2019) with the title Effectiveness of *Endorphin Massage* Against Intensity The first stage of labor pain in women giving birth at the Sahara Maternity Clinic, Padang Sidimpuan City, showed that the intensity of the first stage of labor pain before the intervention was an average of 6.38 and after the intervention, the average was 5.19. The results showed that *Endorphin Massage* effective in reducing the intensity of labor pain during the first stage of labor in women with a p-value of 0.001. The results of the study (Ayu Handayany et al., 2020) entitled "The Effect of Endorphin Massage on the Intensity of Lower Back Pain in Trimester III Pregnant Women" obtained Asymp. Sig. = 0.000, indicating that there is an effect of endorphin massage on the intensity of low back pain. The deep back massage technique is very useful for reducing labor pain so that the mother who is given feels comfortable in the delivery process. This is supported by research conducted by (Jumhirah, 2017) entitled the effect of deep back massage on reducing the intensity of active phase I labor pain. And another study was conducted by (Rosita & Lowa, 2020) with the title the effect of the deep back massage technique on reducing the intensity of the first stage of labor pain in primipara mothers in the working area of the Kassi-Kassi Makassar Health Center, the result was that there was an effect of the deep back massage technique on reducing intensity pain in the first stage of labor in primiparous women.

Based on data obtained at the Selamat Medan clinic, the number of deliveries in 2021 will be 98. The pain caused during childbirth really makes mothers afraid and anxious in facing childbirth. If the mother panics and worries, the mother will experience a birth that is not good, such as blood pressure that can rise, and other nervous tension and the delivery process is not going well, so that there are several mothers who have surgery, because they are afraid of facing a normal delivery and partly because another factor. An initial survey conducted by researchers at the clinic on 6 mothers using the interview method found that 2 people said pain was normal like during the last delivery. Then there were 3 mothers who said the pain was so great that the mother felt traumatized to give birth normally again, and 1 third trimester pregnant woman said they did not want to give birth normally. Based on the description above, the authors are interested in researching *Endorphin Massage* and *Deep Back Massage* Against Pain During the Active Phase I of Maternity Mothers.

The purpose of this research is to find out *Endorphin Massage* and *Deep Back Massage* Against Pain in the First Phase of the Active Phase in Maternity "This research is expected to be input in an effort to overcome labor pain and be able to add to the body of knowledge and can be reading material or reference for future researchers.

METHOD

The type of research used was a Quasi experiment with a two groups post test only design method. This research was conducted at PMB Helen Medan from January to June 2022. The population and sample in this study were mothers giving birth.sampling technique was *non-probability sampling in the form of accidental sampling.* The instrument used in this study was to use an observation sheet using a face pain rating scale. Bivariate data analysis used *Independent t-test analysis.*

1. RESULTS AND *DISCUSSIONS*

RESULTS

Table 1. Pain intensity after being given treatment in the experimental group and the control group

Group	Labor Pain		
	Posttest	*Deviation*	*p-value*
	Mean		
Experiment	4,95	1,050	<0,000
Control	7,45	1,099	

Based on Table 1. it can be interpreted that the experimental group has a mean posttest score of 4.95 which indicates a mild pain scale and in the control group a mean labor pain score of 7.45 indicates a severe pain scale. Based on the independent t test, it is known that there is a significant difference in labor pain after being given endorphin massage intervention and back deep massage, this can be seen from the significance of <0.000, less than 0.05.

DISCUSSION

The process of birth is a physiological process that will be passed by a mother after undergoing a period of pregnancy. Labor pain is a physiological process that every woman who will give birth will go through. However, the response of women when facing the search for labor is not the same. Pain in the first stage of labor is a feeling of discomfort and even pain experienced by women from the beginning of the labor phase (latent phase) to the maximum dilatation phase (10 cm). The pain is caused by dilatation (opening) of the cervix, compression of the nerves in the cervix (cervical gangglionic), ischemia of the uterine corpus, uterine muscle hypoxia, and stretching of the lower uterine segment (Kurniarum, 2016) Methods without drugs (non-pharmacological) to treat labor pain include Deep Back Massage and Endorphin Massage.

Based on Table 1, it can be interpreted that there is a significant difference in labor pain after being given endorphin massage intervention and back deep massage, this can be seen from the significance of <0.0001, less than 0.05. Research in Lampung concluded that it is true that Endorphin massage has an effect on reducing the pain felt by mothers in labor so that it

can provide comfort and a sense of security during the labor process (Dewie & Kaparang, 2020).

Endorphin massage does not cause negative side effects for mothers giving birth, so midwives and husbands are advised to know the Endorphin massage technique as a non-pharmacological method. If Endorphin massage is carried out by the husband, in addition to reducing anxiety when labor pain arises, it can also strengthen the relationship of affection and appreciation between husband and wife, especially as prospective parents of babies to be born (Wahyuni et al., 2017) It is hoped that this will become Strengthening for mothers in childbirth to deal with labor pains that occur. Pain transmission which is inhibited by Endorphine massage can reduce labor pain felt by the mother (Aryani et al., 2015) Other researchers concluded that with Endorphin massage, the body will be stimulated to release endorphins which function to create a feeling of comfort and relieve pain during the birth process. This massage can also make the heart rate normal. Likewise with blood pressure (Meihartati & Mariana, 2018)

According to research (Gaidaka, 2017) with the title the effect of deep back massage on labor pain in the active phase of the first stage of primigravida in labor mothers, states that there is an effect of deep back massage on labor pain of the first stage of the active phase of primigravida in labor mothers. Providing proper and frequent deep back massage, which is carried out by birth attendants and families, will reduce labor pain in the active phase of the first stage of labor (Gaidaka, 2017)

According to research (Fitrianingsih & Prianti, 2017) found that the most dominant pain is felt during labor, especially during the first stage of the active phase. Labor pain can cause stress that causes excessive release of hormones such as catecholamines and steroids. Excessive secretion of this hormone will cause uteroplacental circulation disorders resulting in fetal hypoxia. One way to control labor pain is using non-pharmacological methods, namely the deep back massage method and the endorphine massage method (Fitrianingsih & Prianti, 2017)

Research in Temanggung also yielded the same results, where before being given the Endorphin Massage there was still very severe pain and predominately there was severe pain. Meanwhile, when the Endorphin Massage was given, the variation of pain felt by the respondent was moderate pain and no longer felt very severe pain. This is because the endorphins work when they are given the Endorphin Massage treatment so that mothers experience relaxation (Khasanah & Sulistyawati, 2020)

Massage and touch help mothers feel more relaxed and comfortable during labour. A study states that mothers who are massaged for 20 minutes every hour during the labor stage will be freer from pain, because massage stimulates the body to release endorphins which are natural pain relievers and creates feelings of comfort and pleasure. When massaging, the masseuse must pay attention to the mother's response whether the pressure applied is correct. Gate control theory can be measured for the effectiveness of this method. Illustration of the Gate control theory that pain fibers carry stimulation of pain to the smaller brain and the sensation travels slower than the broad touch fibers. When touch and pain are stimulated together, the sensation of touch travels to the brain closing the gate in the brain. The existence of massage which has a distraction effect can also increase the formation of endorphins in relaxing muscles (Noviyanti, 2016)

An experiment conducted on rabbits showed that massage which was carried out gently at low speed and with a certain frequency carried out on the back of a rabbit for 7 days, can increase and stimulates the release of the hormone oxytocin. This hormone is one of the hormones needed to speed up the birthing process and minimize labor pain (Khasanah & Sulistyawati, 2020)

The *Deep Back Massage* during contractions is done by pressing on the sacrum when contractions occur and ends after the contractions stop. This emphasis will stimulate the cutaneous, so that pain impulses are inhibited and arrive more slowly to the *thalamus. Deep back massage* is given when the mother who is about to give birth feels excruciating pain and disturbs her sense of comfort. In fact, the perception of pain varies for each individual, so an emphasis on the sacral area will help mothers to reduce the pain and anxiety they feel during childbirth, especially for mothers who have a greater perception of pain (Aminah, 2017)

Research in Cirebon also stated the relationship between *Deep Back Massage* and Labor Pain during the Active Phase I. It is said that the friction between the uterus and the abdominal wall can be reduced by *deep back massage*. Likewise, abdominal muscle tension can be reduced and relaxed with *deep back massage* (Fitrianingsih & Prianti, 2017). *Deep back massage* is a subtle and gentle way to make mothers feel *fresher* during labor. The touch and tenderness of the massage can also make the mother feel more relaxed. A study shows that massage done for 20 minutes/hour during the active phase of labor will significantly reduce pain and be free from anxiety. This happens because the massage stimulates the body to release *endorphine* which function as natural pain relievers. *Endorphins* can cause feelings of pleasure and comfort. The masseuse must also be able to apply the pressure that the mother needs appropriately by assessing the mother's response when massaging (Dewie & Kaparang, 2020). The same research was also conducted in Padang, West Sumatra. By doing *deep back massage* for 30 minutes in the treatment group, this study showed an increase in *endorphin* above the average normal value after massage was performed on the backs of mothers in the latent phase of the first stage of labor who experienced labor pain. Whereas in the control group there was no increase in *endorphin* and the average endorphin levels were at normal values, some were even below normal values (Dewie & Kaparang, 2020)

When the mother is being touched, namely back deep massage and pain is stimulated together with the sensation of touch walking to the mind mother and closing the gates in the brain, limiting the amount of pain felt in the mother's mind. Massage given regularly with breathing exercises during contractions is used to distract the mother from going into labor during contractions. Back deep massage has a distasteful effect and can also increase the formation of endorphins in the control system. Back deep massage can make the patient more comfortable because of muscle relaxation. According to the researchers' assumptions, this may be due to the two methods, namely Endorphin Massage and Deep Back Massage, in principle, both are carried out to stimulate endorphins and provide comfort to the mother. Also supported by research results which state that there are benefits of massage when the mother is in labor. Where the birthing mother will feel more comfortable and minimal pain. This happens because the massage will stimulate the body to release endorphins (Aminah, 2017). The results of Enny, regarding the deep back and rubbing massage method are methods of pain control in the form of massage by pressing on the sacrum and back area by pressing the palms of the hands, releasing and pressing again and so on. The patient is lying on his side, carried out during (approximately 6 contractions) to get the result that there is a relationship there is pain (Fitriahadi & Utami, 2021)

Berdasarkan hasil penelitian yang dilakukan oleh (Oktarina et al., 2017) with the title effect of back deep massage on the intensity of labor pain during labor I active phase in the delivery room at Immanudin Hospital, West Kotawaringin Regency with the results of data analysis using the T-test with p value: 0.000 and alpha: 0.05, so the p value <alpha 0.05 so that H0 is rejected and H1 is accepted, meaning that there is a difference in intensity labor pain before and after being given deep back massage. It is hoped that the results of this study can be used as an alternative to reduce pain in labor easily without harmful effects in providing intervention to the mother during the active phase of the first stage of labour.

This study is in accordance with the results of research conducted by (liva Maita, 2013) which stated that the majority

of mothers who experienced pain 6-10 as many as 13 people (61.9%) experienced a decrease in mild pain 0-4 as many as 4 people. Bivariate data obtained that there was a significant effect between Deep Back Massage on reducing labor pain with a p value of 0.004. it is better if the Deep Back Massage technique has been taught during the third trimester of pregnancy during pregnancy exercise classes.

According to the researcher's assumption, there are other factors that can affect the intensity of labor pain besides age, there is parity. Younger mothers have more intense sensory pain compared to mothers who are older. Young age tends to be associated with psychological conditions that are still unstable which triggers anxiety so that the pain is felt even stronger. Age is also used as a factor in determining pain tolerance. In parity, primiparous mothers, the intensity of uterine contractions is stronger than in multiparous mothers, where multiparous mothers who have previous delivery experience will be more adaptable to pain than mothers who have never had experience, in this case, primiparous mothers (Adam & Umboh, 2015)

2. CONCLUSION

There is an effect of endorphin massage and back deep massage on labor pain in the first active phase of labor with a p-value <0.000.

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REFERENCES

Adam, J., & Umboh, J. (2015). Hubungan Antara Umur, Parietas dan Pendampingan Suami Dengan Intensitas Nyeri Persalinan Kala 1 Fase Aktif Deselarasi di Ruang Bersalin RSUD Prof. Dr. H. Aloei Saboe Kota Gorontalo. *Jikmu*, *5*(2a), 361–374.

Adi Anton. (2019). Pengaruh Endorphine Massage Terhadap Skala Intensitas Nyeri Kala I Fase Aktif Persalinan. *Jurnal Kebidanan*.

Aminah, S. (2017). Perbedaan Efektifitas Teknik Firm Counter Pressure Dengan Teknik Deep Back Massage Terhadap Intensitas Nyeri Persalinan Pada Ibu Bersalin Kala 1 Fase Aktif Di Rs Aura

Syifa Kota Kediri. *Jurnal Kebidanan*, *3* (3), 157–164. http://ejurnalmalahayati.ac.id/index.php/kebidanan/article/view/622/556

Aryani, Y., Masrul, M., & Evareny, L. (2015). Pengaruh Masase pada Punggung Terhadap Intensitas Nyeri Kala I Fase Laten Persalinan Normal Melalui Peningkatan Kadar Endorfin. *Jurnal Kesehatan Andalas*, *4*(1), 70–77. https://doi.org/10.25077/jka.v4i1.193

Ayu Handayany, D., Mulyani, S., & Nurlinawati, N. (2020). Pengaruh Endorphin Massage Terhadap Intensitas Nyeri Punggung Bawah Ibu Hamil Trimester Iii. *Jurnal Ilmiah Ners Indonesia*, *1*(1), 12–23. https://doi.org/10.22437/jini.v1i1.9230

Badan Pusat Statistik. (2017). Survei Demografi Dan Kesehatan : Kesehatan Reproduksi Remaja 2017. In Badan Kependudukan dan Keluarga Berencana. *Survei Demografi Dan Kesehatan*, 271. http://www.dhsprogram.com.

Claus, G. M., Redkva, P. E., Brisola, G. M. P., Malta, E. S., de Poli, R. de A. B., Miyagi, W. E., & Moura, A. (2017). atric Exercise Science. The article appears here in its accepted, peer-reviewed form, as it was provided by the submitting author. It has not been copyedited, proofread, or formatted by the publisher. *Jsep*, *28*, 588–595. https://research.rug.nl/files/30892751/Den_Hartigh_et_al._Short_and_long_term_PM_JSEP_accepted_version_Pure.pdf

Dewie, A., & Kaparang, M. J. (2020). Efektivitas Deep Back Massage dan Massage Endorphin terhadap Intensitas Nyeri Kala I Fase Aktif di BPM Setia. *Poltekita : Jurnal Ilmu Kesehatan*, *14*(1), 43–49. https://doi.org/10.33860/jik.v14i1.85

Fitriahadi, E., & Utami, I. (2021). Deep back dan rubbing massage berpengaruh terhadap penurunan intensitas nyeri dan percepatan pembukaan serviks ibu bersalin. *Jurnal Kebidanan*, *10*(1), 13. https://doi.org/10.26714/jk.10.1.2021.13-22

Fitrianingsih, Y., & Prianti, V. A. (2017). Perbedaan Metode Deep Back Massage dan Metode Endorphin Massage Terhadap Intensitas Nyeri Persalinan Kala I Fase Aktif di Puskesmas Poned Plered Kabupaten Cirebon Tahun 2017. *Jurnal Care*, *5*(3), 382–392. https://jurnal.unitri.ac.id/index.php/care/article/view/706

Gaidaka, A. B. (2017). Pengaruh Deep Back Massage Terhadap Nyeri Persalinan Kala I Fase Aktif Ibu Inpartu Primigravida Di BPS Endang Adji, Amd.Keb. *Jurnal Keperawatan*, *6*(1), 78–83. https://doi.org/10.47560/kep.v6i1.163

Jones, L., Othman, M., Dowswell, T., Alfirevic, Z., Gates, S., Newburn, M., Jordan, S., Lavender, T., & Neilson, J. P. (2011). Pain management for women in labour: an overview of systematic reviews. *Cochrane Database of Systematic Reviews*, *7*. https://doi.org/10.1002/14651858.cd009234

Jumhirah. (2017). Pengaruh Deep Back Massage terhadap Penurunan Nyeri Persalinan Kala I Fase Aktif di RSU Dewi Sartika Kota Kendari Tahun 2018. *Journal of Chemical Information and Modeling*, *110*(9), 1689–1699.

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

Kurniarum, A. (2016). *Asuhan Kebidanan Persalinan Dan Bayi Baru Lahir*. https://www.ptonline.com/articles/how-to-get-better-mfi-results

Kuswandi, L. (2012). *Kehamilan dan Persalinan dengan massase*. PT Bhuana, Ilmu Populer Kelompok Gramedia.

Lanny Kuswandi. (2014). *Hypno-Birthing a gentle way to give birth*. Pustaka Bunda.

Liva Maita. (2013). Pengaruh Deep Back Massage Terhadap Penurunan Nyeri Persalinan. *J Ilm Kesehatan* , *9*(pengaruh deep back massage terhadap penurunan intensitas nyeri persalinan), 186–190.

Makvandi, S. (2016). A Review of Randomized Clinical Trials on the Effect of Aromatherapy with Lavender on Labor Pain Relief. *Nursing & Care Open Access Journal*, *1*(3), 42–47. https://doi.org/10.15406/ncoaj.2016.01.00014

Marmi. (2012). *Intranatal Care Asuhan Kebidanan Pada Persalinan*. Pustaka Pelajar.

Maryunani, A. (2015). *Nyeri Dalam Persalinan*. TIM Selemba Medika.

Meihartati, T., & Mariana, S. (2018). Efektivitas Endorphin Massage Terhadap Tingkat Kecemasan Ibu Bersalin Primipara

Kala 1 Fase Aktif (the Effectiveness of Endorphin Massage To Maternal Anxiety Level Who Primipara Active Phase I). *Jurnal Darul Azhar*, *5*(1), 85–93.

Noviyanti. (2016). Pengaruh kepolaran pelarut terhadap aktivitas antioksidan ekstrak etanol daun jambu brazil batu (Psidium guineense L.) dengan metode DPPH. *Jurnal Farmako Bahari*, *7*(1), 29–35.

Nuraini, E., Siagian, N. A., Kesehatan, I., Husada, D., Besar, J., & Deli, N. (2019). Pengaruh Teknik Massage Back-Effleurage Terhadap Pengurangan Rasa Nyeri Persalinan Kala I Di Klinik Bersalin Kurnia Kecamatan Delitua Kabupaten Deli Serdang This study aims to determine the effect of Back-Effleurage Massage Technique on Reduction of First. *Jurnal Penelitian KeperawatanMedik*, *2*(1), 24–29.

Oktarina, J., Asriana, A., & Arti, M. (2017). Pengaruh Deep Back Massage Terhadap Intensitas Nyeri Persalinan Kala I Fase Aktif Di Ruang Bersalin Rumah Sakit Immanudin Kabupaten Kotawaringin Barat. *Jurnal Borneo Cendekia*, *1*(2), 143–159. https://doi.org/10.54411/jbc.v1i2.158

Profil Kesehatan Provinsi Sumatera Utara. (2017). https://www.ptonline.com/articles/how-to-get-better-mfi-results

Rosita, R., & Lowa, M. Y. (2020). Efektifitas Deep Back Massage Dan Effleurage Massage Terhadap Penurunan Intensitas Nyeri Persalinan Kala I Fase Aktif Pada Ibu Primipara Di Puskesmas Jumpandang Baru Makassar. *Jurnal Keperawatan Muhammadiyah*, *5*(1). https://doi.org/10.30651/jkm.v5i1.4760

Susanti, A., Susilawati, E., & Febriani, W. S. (2019). Efektifitas Deep Back Massage dan Counterpressure Massage Terhadap Intensitas Nyeri Persalinan Kala I Fase Aktif Di PMB Yusnimar Kota Pekanbaru Tahun 2019. *Jurnal Ibu Dan Anak*, *7*(1), 55–63.

The, H. F. O. R. (2016). *World Health Statistics SDG s*.

Wahyuni, S., Rahayu, T., Islam, U., & Agung, S. (2017). Endorphin massage. *Jurnal Kebidanan Dan Keperawatan Aisyiyah*, *13(1)*, 88–94.

WHO. (2014). Human Reproduction Programme : Maternal Mortality. *Who*, 1–5. https://www.pop.org/sites/pop.org/files/pub/doc/Maternal_Mortality_revised.pdf