



Kneading Techniques and Deep Breathing Relaxation Against Pain Reduction In First Time Maternity

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ABSTRACT

Labor pain is a complex phenomenon with sensory, emotional and perceptive components and is considered one of the most serious types of pain. Severe pain can affect the increase in heart rate, respiratory system, increase in blood pressure and can cause stress and inhibit the release of the hormone oxytocin which results in inadequate contractions and disruption of cervical dilatation. The aim of the study was to assess the effectiveness of the kneading technique and deep breathing relaxation on pain intensity during the first active phase in labor mothers. This research method is a quasi experiment using the two groups post test only design method. The sampling technique was a purposive sample of 40 people divided into 20 respondents in the intervention group and 20 respondents in the control group and the duration of the study was 7 months. Data analysis consisted of bivariate with Mann Whitney. The results showed that the intensity of labor pain in the group given the kneading technique and deep breathing relaxation for mothers in labor showed a mild pain scale of 11 people (55%). The intensity of labor pain in the non-treated group showed a severe pain scale of 18 (90%). Conclusion: There is an effect of kneading techniques and deep breathing relaxation on the intensity of labor pain in the first active phase of labor in women with a p-value <0.0000

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Kata kunci:

Nyeri Persalinan
Relaksasi Nafas Dalam
Teknik Kneading

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ABSTRAK

Nyeri persalinan adalah fenomena yang kompleks dengan komponen sensorik, emosional dan perseptif dan dianggap sebagai salah satu jenis nyeri yang paling serius. Rasa nyeri yang hebat dapat mempengaruhi kenaikan denyut, sistem pernafasan, kenaikan tekanan darah dan dapat menyebabkan stress dan menghambat pengeluaran hormon oksitosin yang berakibat kontraksi tidak adekuat dan terganggunya dilatasi serviks. Tujuan penelitian untuk menilai efektivitas teknik kneading dan relaksasi nafas dalam terhadap intensitas nyeri kala I fase aktif pada ibu bersalin. Metode Penelitian ini Quasi experiment dengan metode two groups post test only design. Teknik pengambilan sampel yaitu purposive sample sebanyak 40 orang yang terbagi menjadi 20 responden pada kelompok intervensi dan 20 responden pada kelompok kontrol dan lama penelitian dilakukan selama 7 bulan. Analisis data terdiri dari bivariat dengan Mann Whitney. Hasil penelitian menunjukkan bahwa Intensitas nyeri persalinan pada kelompok yang diberikan teknik kneading dan relaksasi nafas dalam pada ibu bersalin menunjukkan skala nyeri ringan sebanyak 11 orang (55%). Intensitas nyeri persalinan pada kelompok yang tidak diberikan terapi menunjukkan skala nyeri berat sebanyak 18 (90%). Kesimpulan: Ada pengaruh teknik kneading dan relaksasi nafas dalam terhadap intensitas nyeri persalinan kala I fase aktif pada ibu bersalin dengan nilai p-value < 0,0000

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INTRODUCTION

Labor and birth are normal physiological events in life. The birth of a baby is also a social event for the mother and family. Normal and spontaneous delivery is when the baby is born with the back of the head without going through special tools or help and does not injure the mother and baby and takes place in less than 24 hours (Sulfiyanti et al., 2020). The smoothness of the delivery process can be influenced by various factors, including psychological factors, namely anxiety, pain during contractions or pain. Pain in labor can be described as one of the most intense pains a mother has ever experienced. (Puspita Sari, 2019a) Labor pain is a complex phenomenon with sensory, emotional and perceptive components and is considered one of the most serious types of pain (Legawati, 2019)

Severe pain can affect the increase in pulse rate, respiratory system, increase in blood pressure and can cause stress and inhibit the release of the hormone oxytocin which results in inadequate contractions and disruption of cervical dilatation (Smith et al., 2018). If labor pain is not handled, it can cause anxiety so that the production of the hormone adrenaline increases and there is vasoconstriction which can cause decreased blood flow to the fetus. Oxygen to the uterus and decreased blood flow as well as tissue ischemia can result in hypoxia in the fetus and will experience a process, namely prolonged labor and more and more pain impulses. (Vermelis et al., 2010) This can also cause hyperventilation resulting in heavier and longer labour, which can cause maternal death. (Kulkarni & Sia, 2014. In addition, the consequences of labor pain can cause pain that continues to the postpartum period (Komatsu et al., 2020).

Complications during labor are cases that cannot be predicted beforehand. The usual complications of childbirth are , ranging from the inaccuracy of giving pain relievers, fetal distress and bleeding. 15% of mothers in Indonesia experienced labor complications and 21% stated that the labor they experienced was painful because they felt very severe pain, while 63% did not receive information about preparation what must be done to reduce pain during labor (IDHS, 2013). The results of another study found that primiparas felt the most pain, which was 63% higher than multiparas (37%). (Widiawati & Legiati, nd) handled adequately causes discomfort to the mother and will affect the delivery process, because it causes will the mother push uncontrollably. Discomfort will be more felt in primiparas (women who have just given birth for the first time) because in primiparas the pain is more misery and a first experience for mothers so they don't know how to deal with pain properly, because based on research results age can also affect the intensity of labor pain where if the mother's age <20 years will experience childbirth for the first time in her life, where a relatively young age will cause an anxiety response in the mother because it is her first delivery, this is also the case with mothers who are >35 years old who have anxiety if there is a risk of complications in pregnancy. (Afrityeni, 2017)

Likewise with parity which can affect labor pain which is triggered by anxiety in facing childbirth for primipara mothers while multigravida mothers can overcome pain because they already have experience in previous deliveries. (Gusti et al., 2017) Various efforts can be made to reduce pain during labor, both non-pharmacological and pharmacological. Pharmacological management can cause side effects on the mother and fetus, while non-pharmacological measures are said to be simpler, more effective, inexpensive and without any harmful effects on a

person, as well as increasing the comfort of childbirth for the mother. (Permata Sari et al., nd)

To reduce maternal pain during childbirth, various non-pharmacological therapeutic innovations are carried out in general, the essence of the development of several non-pharmacological therapies is to increase maternal comfort by reducing anxiety and fear during childbirth. As the mother's anxiety and fear decrease, the physiological process of labor hormones can work optimally. The feeling of relaxation that is generated can reduce the sensation of pain resulting from increased delivery services (Siswi Utami et al., 2020).

Handling and monitoring of labor pain, especially during the first stage, is very important, because it determines the point whether the mother can give birth normally or end with an action due to complications caused by pain in labor can be reduced by using pharmacological and non-pharmacological methods. If possible the choice of non-pharmacological methods for pain management should be considered before using analgesic drugs. Most of the pharmacological pain management is a medical action and has side effects for both the mother and the fetus. (Biswan et al., nd) The kneading technique is a way of massaging using moderate hand pressure and long strokes and squeezing using the fingers above the skin layer of muscle tissue which is useful for helping to increase circulation and control local pain. Massage is a technique for applying gate-control theory, using massage techniques can relieve pain by inhibiting pain signals, increasing oxygenation to all tissues and blood flow. (Nurhidayat & Marlina, 2022)

Deep breathing relaxation therapy is a technique of taking deep breaths during contractions by exhaling from the chest through the nose to circulate oxygen to the blood and circulate it throughout the body. So that when the mother is giving birth she will feel comfortable and relaxed because the body will release endorphins which will help relieve natural pain in the body. (Cicek & Basar, 2017)

With so many types of methods that can help reduce pain, researchers are interested in proving the effect a combination of 2 non-pharmacological methods, namely kneading techniques and deep breathing relaxation. So this study aims to determine whether there is an effect of giving massage with kneading techniques and deep breathing relaxation on pain reduction. And this research can be used as input in improving midwifery care for mothers in labor to reduce labor pain. As well as this research can be used as basic data and references to carry out further research related to the effect of kneading techniques and deep breathing relaxation as well as being used as a basis for broader development of complementary midwifery service

METHOD

This research is a quantitative study with a *quasi-experimental design* using the *two groups post test only design method*. Who received the intervention of kneading technique and deep breathing relaxation The intervention was carried out in the intervention group when the mother felt contractions with a combination of kneading massage in the spine starting from the lumbar spine to the nape of the neck with gentle and circular massage, squeezing with the fingers for 10-20 minutes and doing deep breathing relaxation during contractions using breathing. Chest through the nose and out through the mouth. The research location was at PMB Sumiariani Medan from December 2021

to June 2022. The selected research subjects were all populations that met the inclusion and exclusion criteria. The inclusion criteria were active phase I parturition mothers, primigravida and multigravida, head presentation, no history of pregnancy complications, while the exclusion criteria were active phase I parturition mothers with a history of disease and pregnancy complications sampling technique in this study was *purposive sampling*, namely 20 respondents in the intervention group and 20 respondents in the control group. Pain intensity will be measured using *NRS (Numeric Rating Scale)*, where this questionnaire has been widely used to measure pain intensity, where the questionnaire contains numbers to describe the range of pain intensity with a value of 0-10. And statistical tests were carried out using *Mann-Whitney*

RESULTS AND DISCUSSION

Result

Table 1. Frequency Distribution of Maternal Pain Intensity in Intervention Group

No.	Pain Intensity	Frequency	%
1	No Pain	-	-
2	Mild Pain	9	45
3	Moderate Pain	11	55
4	Severe Pain	-	-
5	Very Severe Pain	-	-
Total		20	100

Table 2. Frequency Distribution of Maternal Pain Intensity in the Control Group

No.	Pain Intensity	Frequency	%
1	No Pain	-	-
2	Mild Pain	-	-
3	Moderate Pain	2	10
4	Severe Pain	18	90
5	Very Severe Pain	-	-
Total		20	100

Table 3. The Effect of Combination of Kneading Techniques and Deep Breathing Relaxation on the Intensity of Labor Pain in First Stage Inpartum Mothers at PMB Sumiariyani Medan

Variabel		Mean	SD	P Value
Pain	Intervension	10,50	210,00	0,000
	Control	30,50	610,00	

Discussion

Based on the results of the study, it was found that the intensity of labor pain in the first stage of labor in in-partu mothers after being given kneading and breathing relaxation techniques in the intervention group was the majority of moderate pain as many as 11 people (55%). And from the results of the statistical test using Mann Whitney , the average difference in the intervention group was 10.50 and the control group was 30.50. And the p value is 0.000 (pvalue <0.005) which states that there is an effect of giving kneading techniques and deep breathing relaxation to reduce the intensity of pain in the first stage of labor.

Labor pain that is felt is protective, for example pain due to stretching of soft tissues when the baby's head pokes at the vulva. Discomfort during the labor stage is caused by two things including in the first stage of labour, uterine contractions causing cervical dilatation and thinning as well as uterine ischemia (decreased blood flow resulting in a deficit of local oxygen) due to contraction of the myometrial arteries. Discomfort due to cervical changes and uterine ischemia is the reason for viresceral pain. This pain originates from the lower abdomen and spreads to the lumbar region of the back and down to the thighs. In the second stage of labour, namely the stage of expulsion of the baby, the mother experiences somatic pain or pain in the perineum. This arises due to stretching of the perineal tissue so that the fetus can pass through this part as well due to the pulling of the peritoneum and support of the uterocervical during contractions. The pain experienced in the third stage is uterine pain, a pain similar to the pain experienced in the early stages of labour. Pain can also move so that it is felt in the back, waist and thighs. An increase in the sympathetic nervous system arises in response to pain and can result in changes in blood pressure, pulse, respiration and skin color. Attacks of nausea, vomiting and excessive sweating are also common. (Syalfina, 2017)

Respondents felt different perceptions of pain with the average pain score of mothers in labor in the active phase I was in the moderate pain range. Pain is in the moderate pain range. Pain during labor is caused by stretching of the uterus and cervical dilatation. This is also related to the psychological condition of the mother such as anxiety which is the main factor causing pain in labor and affects uterine contractions and cervical dilatation so that labor can last a long time. (Puspita Sari, 2019)

Handling labor pain in labor is the main thing that must be considered by health care providers when providing birth assistance. Birth attendants and mothers often forget to apply pain control techniques in the first stage so that the mother experiences severe pain. This will cause the mother to have a bad birth experience, experience prolonged labor trauma and can even directly cause postpartum blues. So it is important for a birth attendant to meet the mother's need for comfort during childbirth. (Alfian Raja Kb et al., 2018)

One way to do pain control is to give a massage that stimulates the body to release endorphins, which are natural painkillers and stimulate the production of the hormone oxytocin, lowering stress hormones and neurological stimulation. Massage therapy causes the surface of the skin, soft tissues, muscles, tendons, ligaments and fascia manually. The release of endorphins controls the nerve gate and stimulates the sympathetic nerves, so that it can cause feelings of calm, reduce pain intensity and relax muscles. (Solehati et al., nd)

The kneading technique is massaging using the fingers over the superficial layer of muscle tissue to help control local pain and increase circulation and deep relaxation is the technique of taking deep breaths during contractions using chest breathing Through the nose, oxygen will flow into the blood, then circulated throughout the body so that the birthing mother will feel relaxed and comfortable. (Lanina et al., 2020). The kneading technique can be done using the palms of the hands and with the thumbs. The rhythm and pressure given also slowly strengthens. (Obstetrics et al., 2022)

This type of massage requires a little pressure to help reduce muscle tension and is very relaxing. When muscle tissue is relaxed, it improves blood and lymph circulation and can reduce local pain and reduce fatigue and stress. In

addition, the kneading technique can also provide physiological effects in the form of increased blood flow, lymphatic flow, stimulation of the nervous system, pain relief, because it stimulates increased production of endorphins, increases venous return which will help efficiently return heart blood, and helps drain acid. lactate that accumulates in the muscles thereby helping accelerate the elimination of lactic acid in the blood and muscles. (Ayu Wicaksono et al., 2021)

Relaxation is a technique for achieving a relaxed state. This means that when our entire nervous system, body organs and post-sensory organs rest to release existing tension, we basically remain conscious. One of the most commonly used methods is breathing control. By taking deep breaths, we circulate oxygen to the blood which then circulates to all parts. body. As a result, the mother becomes more calm and stable. (Astuti et al., 2019)

Breathing relaxation is one of the most useful skills for dealing with labor pain. This labor breathing relaxation skill to deal with pain can be used during labor so that you can handle labor properly, meaning you are not overwhelmed or panicked when facing a series of contractions. Women who use these skills usually feel less pain than women who don't. (Septiani & Agustia, 2021) One of the efforts that can be made to reduce anxiety that will trigger labor pain, deep breathing relaxation is an exercise that can be done during pregnancy by setting a slower and deeper tempo and intensity. Deep breathing relaxation is done with a normal rhythm 3 times and repeated up to 15 times with short breaks every 5 times. And this relaxation technique is the easiest technique and can increase blood oxygenation so that it can effectively reduce stress and reduce anxiety (Laili & Wartini, 2017)

Based on the results obtained, this study is in line with research (Chotimah et al., nd) that the kneading and Deep breathing relaxation can reduce labor pain in the first active phase with a mean of 7.35 on the pre test and 3.65 on the post test and a p value of 0.000. Likewise with research (Aprilia, 2020) which provided intervention for Mrs. S, by combining the kneading technique and deep breathing relaxation, showed Mrs. S said that she was more relaxed and comfortable with the pain scale being 4. In accordance with the theory that mothers who are about to give birth respond to pain in different ways. Some mothers will be fearful, and anxious, while others will be tolerant and optimistic. Some mothers cry, whimper, scream, refuse help, or move around aimlessly in times of intense labor pain, while others lie quietly in bed and may simply close their eyes, grit their teeth, bite their lip or sweat profusely. time of experiencing labor pain (Faujiah et al., 2018) So that a conducive social environment is needed during the labor process which can increase women's perceptions and experiences of labor pain. (Whitburn et al., 2017)

According to the researchers' assumptions, the average pain intensity in the intervention group decreased pain intensity due to relaxation techniques performed during moderate contractions. takes place, maximum inhalation of air results in an adequate supply of oxygen to the uterus so that it can reduce tension in the muscles as well as reduce the fear or anxiety that exists in the patient. This is also supported by the patient's good psychological condition. Good psychology can occur due to various things, namely the support from the husband and the condition of the mother who is confident in going through labor so that the mother does not feel severe labor pain. In addition, the mother's parity affects the mother's readiness in facing childbirth, a good experience about previous births will make the mother assume that childbirth is not something painful.

In accordance with the theory that giving kneading and deep breathing relaxation techniques are significant for reducing pain intensity, there is a decrease in the intensity of pain in labor after being given kneading and relaxation because the two interventions have almost the same effect, namely eliminating pain. technique The kneading is given by doing light massage on the back and lumbar which is the center of pain due to uterine contractions. Light massage that is done can increase muscle relaxation so that it can break the fear-tension-pain cycle (fear of tension pain). While relaxation techniques are performed when contractions are in progress, maximum inhalation of air results in sufficient oxygen supply to the uterus so that it can reduce tension in the muscles as well as reduce the fear or anxiety that exists in the patient. (Sriyuningtyas & Galaupa, nd)

This kneading technique can help control local pain and improve circulation. Meanwhile, deep breathing relaxation techniques can stimulate the body to produce endorphins and enkephalins. These endorphins and enkephalins are endogenous chemicals with an opioid-like structure, in which endorphins and enkephalins can inhibit impulses in the brain and spinal cord. According to the researchers' assumption, there is a decrease in the intensity of maternal pain before and after being given kneading and relaxation because these two interventions provide almost the same effect, there was a decrease in the intensity of maternal pain after being given kneading and relaxation because the two interventions had almost the same effect. Because the kneading is given by doing light massage on the back and lumbar which is the center of pain due to uterine contractions.

Light massage that is done can increase muscle relaxation so that it can break the cycle of pain, while relaxation techniques are carried out when contractions are in progress, maximum air inhalation results in sufficient oxygen supply to the uterus so that it can reduce tension in the muscles.

LIMITATION OF THE STUDY

Keterbatasan dalam penelitian ini adalah tenaga untuk melaksanakan penelitian ini sangat terbatas karena harus bersiap menunggu pasien yang datang bersalin, mengingat pasien yang dalam satu hari hanya satu orang bahkan tidak ada yang datang bersalin, sehingga membutuhkan waktu yang lebih lama karena peneliti tidak bisa meluangkan waktu untuk menunggu pasien. Selain itu jumlah sampel sangat terbatas sehingga tidak bisa diambil secara homogen

CONCLUSIONS AND SUGGESTIONS

Giving kneading technique and deep breathing relaxation can reduce labor pain intensity in active phase 1 in parturient women. So that it can help mothers relax more during the labor process

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written consent of every person who communicates personally or recognized by the individual in the text.

ETHICAL CONSIDERATIONS

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