THE EFFECT OF DEEP BACK MASSAGE AND WARM COMPRESSES ON LABOR PAIN DURING ACTIVE PHASE I

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ABSTRAK : EFEK PIJAT PUNGGUNG DALAM DAN KOMPRES HANGAT TENTANG NYERI BURUH PADA TAHAP AKTIF I

Latar Belakang : Dari data survey study pendahuluan yang dilakukan wawancara singkat ditemukan 12 dari 15 ibu bersalin kala 1 fase aktif mengalami nyeri berat terkontrol dengan menggunakan skala ukur NRS (Numeric Rating Scale) diperoleh data bahwa 3 ibu bersalin mengalami nyeri sedang. ibu bersalin belum mengetahui adanya teknik dalam mengatasi rasa nyeri yang berlebihan dengan harapan dilakukannya penelitian ini dapat mengurangi tingkat rujukan akibat rasa nyeri yang tidak terkontrol. Nyeri pada ibu bersalin juga menyebabkan meningkatnya kadar katekolamin atau hormon stress seperti epinefrin dan kortisol. Peningkatan kadar katekolamin atau hormon stres dapat mengurangi kemampuan tubuh ibu untuk menahan rasa nyeri. Hormon yang produksinya meningkat karena persalinan diantaranya adalah hormon kortisol.

Tujuan : Penelitian ini untuk diketahui pengaruh deep back massage dan kompres hangat terhadap nyeri persalinan kala 1 fase aktif di RSUD Akhmad Berahim Kabupaten Tana Tidung.

Metode : Penelitian ini menggunakan desain Quasi eksperiment jenis pretest dan posttest. Menggunakan consecutive sampling Jumlah sampel adalah 30 responden yang terdiri dari 15 orang kelompok deep back massage dan 15 orang kelompok kompres hangat. Instrument penelitian ini menggunakan skala nyeri NRS (Numeric Rating Scale) dan SOP.

Hasil : Berdasarkan uji wilxocon sign rank menunjukkan nilai P value = 0.001< α (0.05), sehingga Ha diterima.

Kesimpulan : Ada pengaruh signifikan hasil pretest dan posttest terhadap nyeri persalinan kala 1 fase aktif. Saran: diharapkan dengan ada penelitian ini dapat dijadikan salah satu referensi metode non farmakologi untuk mengatasi nyeri persalinan

Kata Kunci: Deep Back Massage, Kompres Hangat, Nyeri Persalinan

ABSTRACT

Background: From the preliminary survey study data conducted by short interviews, it was found that 12 out of 15 mothers who gave birth during the 1st active phase experienced controlled severe pain using the NRS (Numeric Rating Scale) measurement scale, data was obtained that 3 mothers gave birth with moderate pain. Maternity mothers are not aware of any techniques for overcoming excessive pain in the hope that this study can reduce the referral rate due to uncontrolled pain. Pain in childbirth also causes increased levels of catecholamines or stress hormones such as epinephrine and cortisol. Increased levels of catecholamins or stress hormones can reduce the mother's body's ability to withstand pain. Hormones whose production increases due to childbirth include the hormone cortisol.

Purpose: This study was to determine the effect of deep back massage and warm compresses on labor pain during active phase 1 at Akhmad Berahim Hospital, Tana Tidung Regency.

Method: This study uses a Quasi experimental design of pretest and posttest types. Using consecutive sampling, the number of samples was 30 respondents consisting of 15 people in the deep back massage group and 15 people in the warm compress group. This research instrument uses the NRS (Numeric Rating Scale) pain scale and SOP.

Results: Based on the wilxocon sign rank test, it shows a P value = 0.001< α (0.05), so Ha is accepted.

Conclusion: There is a significant influence of pretest and posttest results on labor pain during active phase 1. Suggestion: it is hoped that this research can be used as a reference for non-pharmacological methods to overcome labor pain

Keywords: Deep Back Massage, Warm Compress, Labor Pain

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INTRODUCTION

Childbirth is a physiological thing that occurs at the end of pregnancy for all women in the world, in the process of childbirth begins with a contact that is getting stronger and stronger so that it causes the opening of the cervix (Rahmadyanti et al 2022). The World Health Organization (WHO) estimates that every year there are 210 million pregnancies worldwide, and 20 million women experience pain during childbirth (Kholisoh, Winarni, and Afiyanti 2022).

Pain in childbirth is a manifestation of contraction (shortening) of the uterine muscles, unresolved pain can cause breathing and the mother's heart rate will increase, causing blood flow from oxygen to the placenta to be disrupted (Kholisoh et al. 2022). The pain experienced during childbirth is new to every mother and can be influenced by several factors including culture, fear, anxiety, past childbirth experiences, background and support (Mardiana Ahmad et al. 2023).

Research conducted in the UK revealed that 93.5% of mothers who gave birth described labor pain as severe pain, while the same study was also conducted in Finland where 80% of women described pain as severe pain that could not be overcome or tolerated (Utari and Futriani 2022). According to the 2017 SDKI survey, the most common labor complications were anxiety or severe pain at 53.5% and prolonged labor at 40.6% (Hariyanti and Astuti 2021). If the pain is not managed properly, it can worsen the targeted Maternal Mortality Rate to drop to 70 per 100,000 live births by 2030 (Utari and Futriani 2022).

The treatment and supervision of labor pain, especially during the 1st active phase, is very important, because this is the determining point whether a mother can undergo normal labor or end it with an action due to complications caused by very severe pain (Nurulicha and Ashanti 2019). If not treated properly, it will cause other problems so that the production of the hormone adrenaline increases and results in vasoconstriction which causes the mother's blood flow to the fetus to decrease (Annisa, Idyawati, and Ulya 2019).

Unresolved labor pain can cause pregnant women to choose to give birth by sectio caesarean section (SC). This was revealed in the research of Rahman et al. (2017) that 35% of respondents chose sectio caesaria (SC) (Al 2020). Along with research conducted in the United States which revealed the fact that 70% to 80% of mothers want to give birth painlessly (Parapat and Tarigan 2022). Currently, 20% to 50% of hospital-delivered deliveries in underdeveloped countries are performed by caesarean section (SC) of mothers who prefer surgery to avoid excessive pain at the time of delivery. This ratio accounts for more than half of all hospital births in Brazil, the highest proportion in the world (Nature, 2020).

In North Kalimantan Province in 2021, the percentage of childbirth assisted by health workers reached 92.5%. In Tana Tidung Regency, one of the districts in North Kalimantan, as many as 84.98% of mothers who gave birth in January-December 2021 gave birth spontaneously vaginally and 21.85% of mothers who were referred due to childbirth complications that occurred and could not be treated.

Pain in childbirth also causes increased levels of catecholamines or stress hormones such as epinephrine and cortisol. Increased levels of catecholamins or stress hormones can reduce the mother's body's ability to withstand pain. Hormones whose production increases due to childbirth include the hormone cortisol. The experience of childbirth is influenced by the environment and the place where the delivery takes place.

There are various ways to reduce labor pain medically and non-medically. Medically used to reduce labor pain is commonly used in hospitals, including by administering analgesia drugs that are injected through intravenous infusions, through respiratory tract inhalation, or by blocking nerves that transmit pain (Al 2020). Non-pharmacological methods can also increase satisfaction during labor, as the mother can control her feelings and her strength. Relaxation, breathing techniques, movement and position changes, massage, hydrotherapy, pads/cold therapy, music, acupressure, aromatherapy are non-pharmacological techniques that can improve maternal comfort during childbirth and have an effect on effective coping on the childbirth experience (Nurulicha and Ashanti 2019).

In this study, researchers chose deep back massage and warm compresses to reduce pain because they have many advantages, one of which is relieving muscle tension so that it provides a sense of comfort. This deep back massage and warm compress method is a complementary therapy that is easy and safe to do without the need for special training. The administration of warm compresses has the principle of heat transmission through conduction where heat is applied to the back to improve blood circulation and reduce muscle tension so that in the hope that pain can be reduced, in addition, warm compresses are vasodilating which can increase the local temperature in the skin so that it can increase

circulation in tissues to reduce the process of muscle spasms and reduce pain (Soeparno 2020). Warm compresses using hot bottles, filled with water at a temperature of 46-51°C, wrapped in a cloth attached to the back are carried out three times with an interval of one hour during the active phase 1 of labor. According to Prapat and Tarigan in their study, after being given warm compresses, the average respondent experienced a decrease in the labor pain scale, which was 3.41 points to the decrease in the pain scale in active phase I labor.

Deep back massage is excellent and is a gentle way to help mothers give birth. The touch and gentleness of the massage in the sacrum area makes the mother of childbirth more relaxed. Pressing the back with the force concentrated on the base of the arm. Three cycles are carried out in childbirth during the 1st active phase. A study showed that women who received massage during the labor phase felt calmer and more pain-free. This happens because massage can stimulate the body to release endorphine compounds which are natural pain relievers. The results of a similar study were conducted in pregnant women during the first active phase were obtained before Deep Back Massage by 37.5% in controlled severe pain and labor pain after Deep Back Massage by 50% in moderate pain.

From preliminary survey study data conducted at Akhmad Berahim Hospital in May 2023, conducting a short interview, it was found that 12 out of 15 mothers who gave birth during the 1st active phase experienced controlled severe pain using the NRS (Numeric Rating Scale) measurement scale. Data on the number of deliveries in the last 6 months is 179 normal deliveries with an average number of 36 deliveries per month. The reason for the selection of the location of this study is that only the Akhmad Berahim Hospital has a delivery room in Tana Tidung Regency, while there are 2 sub-district health centers that serve childbirth but are difficult to reach by researchers. At the Akhmad Berahim Hospital itself, maternity mothers do not know of any techniques in overcoming excessive pain in the hope that this study can reduce the referral rate due to uncontrolled pain. Based on this background, the author is interested in researching the Effect of Deep Back Massage and Warm Compresses on Childbirth Pain in the First Active Phase at Akhmad Berahim Hospital, Tana Tidung Regency.

RESEARCH METHODS

Quantitative research with Quasy-experimental through a two-group pretest and posttest design approach. The population of pregnant women in the first phase of active childbirth with normal delivery was 253 patients. The sample used 30 respondents using the Consecutive sampling technique with inclusion criteria: Respondents were already in the inpartu during the 1st active phase of the opening of 4-7 cm. Respondents did not experience skin disorders of other comorbidities in the sacrum area. Respondents were not on analgesic therapy. Cooperative respondents (can work together). Pregnant women who do not get drugs or other herbs that have the effect of increasing uterine contractions. The mother's skin is not allergic to heat. Exclusion criteria: The mother gave birth with an unstable condition (increased blood pressure, irregular fetal heartbeat). Pregnant women with high risk or pathologies (pre-eclampsia, placental abruption, placenta previa, anemia, suffering from heart disease, diabetes mellitus, and inadequate contractions)

The research was conducted at Akhmad Berahim Hospital, Samarinda. Performing the Deeep Back Massage intervention, the pressure on the sacrum to reduce pain for 20 minutes during the contact, the pressure is terminated after the contact ends. Warm compresses using rubber bottles filled with warm water are attached to the back for 20 minutes during contractions. Warm compresses are done 3 times with 10-minute intervals of hot water to maintain the temperature around 37-40oC. The instrument uses a Numeric Rating Scale (NRS) and an observation sheet. Univariate and bivariate data analysis (t-test).

RESEARCH RESULTS
Univariate Analysis

Based on table 1, it can be seen that of the 30 respondents presenting the most 20 respondents based on age in 20-35 years old as much as 66.7%, based on the largest presentation education with high school education as many as 13 respondents (43.3%), then for presentations based on the number of pregnancies with the largest presentation with the first pregnancy as many as 9 respondents (30.0%).

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Table 1
Overview of respondent characteristics at Akhmad Berahim Hospital, Tana Tidung Regency

Variable	Frequency	Percent
Age of Respondents		
<20 Tahun	1	3,3
20-35 Tahun	20	66,7
>35 Tahun	9	30,0
Respondent Education		
Primary School	5	16,7
Junior High School	6	20,0
Senior High School	13	43,3
College	6	20,0
Respondent Parity		
1st pregnancy	9	30,0
2nd pregnancy	8	26,7
3rd pregnancy	8	26,7
pregnancy >4	5	16,7

Based on table 2, it can be seen that of the 15 respondents in the Deep back massage group before being given treatment (pre-test), 5 people (33.3%) experienced moderate pain, and 10 people (66.7%) experienced severe pain. In the deep back massage group that after being given the intervention (post-test) experienced a decrease in pain, 9 people (60%) experienced mild pain, and 6 people (6.7%) experienced moderate pain.

Table 2
Overview of Labor Pain in Mothers in Phase I of the Active Phase Before and After Deep Back Massage Labor Pain at Akhmad Berahim Hospital, Tana Tidung Regency

Pain	Pretest		Posttest	
	Frequency	Persent	Frequency	Persent
Mild Pain	-	-	9	60,0
Moderate Pain	5	33,3	6	40,0
Severe Pain	10	66,7	-	-

Table 3
Overview of labor pain in mothers during the first active phase before and after warm compresses at Akhmad Berahim Hospital, Tana Tidung Regency

Pain	Pretest		Posttest	
	Frequency	Persent	Frequency	Persent
Mild Pain			12	80,0
Moderate Pain	6	40,0	3	20,0
Severe Pain	9	60,0		

Based on table 3, it can be seen that of the 15 respondents in the Warm Compresses group before being given treatment (pre-test), 6 people (40%) experienced moderate pain, and 9 people (60%) experienced severe pain. In the Warm Compresses group that after being given the intervention (post-test) experienced a decrease in pain 12 people (80%) experienced mild pain, and 3 people (20%) experienced moderate pain.

Bivariate Analysis

Based on table 4 on the influence test using wilcoxon sign rank. Indicates that the statistical test output is known Asymp value. Sig. (2-tailed) at deep back massage is 0.000<0.05 which means that Ha is accepted and Asymp value. Sig. (2-tailed) at a warm compress of 0.001<0.05 that Ha is accepted. Thus, it can be concluded that there is an effect before and after the intervention of deep back massage and warm compresses on labor pain during active phase 1.

Table 4
The Effect of Deep Back Massage and Warm Compresses on Labor Pain in the I Active Phase
At Akhmad Berahim Hospital, Tana Tidung Regency

Intervensi	N	Z	Asymp. Sig. (2-tailed)
Pretest-posttest Deep back massage	15	-3,578	,000
Pretest-Posttest Warm Compress	15	-3,391	,001

DISCUSSION
Description of Labor Pain in Mothers During Phase I Active Phase Before and After Deep Back Massage Labor Pain at Akhmad Berahim Hospital, Tana Tidung Regency.

Based on the results of the study before being given deep back massage, the results of 15 respondents were obtained from 10 respondents (66.7%) feeling a pain scale of 7-9 or severe pain, namely pain objectively, the client sometimes cannot show commands but can still respond to actions, can show the location of pain, cannot describe it, is not overcome by changing the position of long breaths and friction. The results of the study after being given Deep back massage were obtained from 15 respondents, there were 9 respondents (60%) who felt on a pain scale of 1-3 or mild pain, which is objectively able to communicate well

Deep back massage quoted from Lally JE, in the book (Mardiana Ahmad et al. 2023) states that deep back massage is when childbirth can function as an epidural analgesic that can reduce pain and stress, so that it is able to provide comfort during childbirth, so it is necessary to provide essential care to the mother during the delivery process which aims to reduce pain and stress due to childbirth. According to Nolan (2003) in the book non-pharmacological pain management (Mardiana Ahmad et al., 2023), deep back massage causes the body to release natural pain relief hormones called endorphins. The results of the study stated that the endorphin levels of pregnant women who were massaged were higher than those who were not massaged. The higher the endorphin level, the lower the intensity of pain felt by the mother.

The results of previous studies showed that before Deep Back Massage, mothers who experienced severe pain levels were controlled by 20% with an average pain level between 5.69-6.41. and after doing Deep Back Massage, mothers who experienced controlled severe pain had decreased to moderate pain and mild pain with an average of 4.04-4.66. (Nengsih 2022). In line with the research conducted by Ulya, the results of the study in the control group obtained an average pain intensity before the mass of 7.00 with a standard deviation of 0.816, min-max 6-8 and 95% CI was 6.61-7.39. After the average mass was 6.16 with a standard deviation of 1.259 min-max 4-8 and 95% of the CI was 5.55 – 6.76 (Annisa et al. 2019).

Thus, according to the researcher, there is a decrease in labor pain during the 1st active phase because of the deep back massage intervention which provides stimulus in the form of strong pressure on the lower back or sacrum area which can cause an effective relaxation and comfort effect in reducing pain during uterine contractions in the delivery process that occurs in the respondents, which is an unpleasant feeling that is individual in nature that will be experienced by the mother giving birth in the process. childbirth in both primipara and multipara mothers

Description of Labor Pain in Mothers in Phase I Active Phase Before and After Warm Compresses at Akhmad Berahim Hospital, Tana Tidung Regency

Based on table 3, it can be seen that of the 15 respondents in the Warm Compress group before being given treatment (pre-test), there were 6 people (40%) experiencing moderate pain, and 9 people (60%) experiencing severe pain, namely objectively the client's pain sometimes cannot show commands but can still respond to actions, can show the location of pain, cannot describing it, it is not overcome by changing the position of long breaths and friction. In the Warm Compress group that after the intervention (post-test) experienced a decrease in pain intensity, 12 people (80%) experienced mild pain, and 3 people (20%) experienced moderate pain. The results of the study after being given a warm compress were obtained from 15 respondents, there were 12 respondents (80%) who felt on a pain scale of 1-3 on a mild scale, which is objectively able to communicate well.

The administration of warm compresses has the working principle of heat transmission through conduction where heat is applied to the painful area, namely in this case the back to improve blood circulation and reduce muscle tension so that in the hope that pain can be reduced, so that it can make the mother feel more comfortable and can reduce pain during the delivery process, in addition to that warm compresses are vasodilating which can increase the local temperature on the skin so that can increase circulation in tissues to reduce the process of muscle spasms and reduce pain (Soeparno 2020). According to Andreinie's research in the study (Parapat and Tarigan, 2022), warm compresses are an easy action and can be done by anyone at home to overcome complaints of low back pain. According to Dewi in her research (Hayati and Hasanah 2018) Doing more compresses warm compresses for 20 minutes with 10-minute intervals of hot water to maintain the temperature This decrease occurs after the administration of warm compresses using warm bags placed on the sacrum and lower abdomen for 20 minutes and repeated 3 times. Giving warm compresses will make respondents feel more comfortable.

This is in line with research (Fitri, Umarianti 2023) which said that before and after the intervention in the experimental group had an average decrease of 2,062 while the control group had an average decrease of 1,188, this confirms that the majority of respondents experienced moderate pain decreasing to mild pain and severe pain decreasing to moderate pain. The results of the study also conducted by (Tarigan et al 2022) showed that the average intensity of labor pain during the 1st active phase experienced a significant decrease, ranging from moderate pain (40%) to mild pain (80%). that before the warm compress was applied, 73.3% of the 15 respondents experienced pain on a scale of 7-9 (severe pain) and after the intervention 53.3% experienced a decrease in pain scale of 4-6 (moderate pain), 20% experienced a decrease in pain scale 1-3 (mild pain), but 13.3% experienced a decrease in pain scale but still remained in the severe pain category, namely from a pain scale of 8 to a pain scale of 7 and 6.7% did not experience a decrease in persistent pain on a pain scale of 9. The results of the study showed that the pain range experienced before the warm compress was applied on a scale of 10-5 with an average of 7.6, after being given a warm compress on the pain scale range on a scale of 9-3 with an average of 5.8, this showed a decrease in the pain scale before and after being given a warm compress.

This is because warm compresses can increase blood flow to a part and reduce edema which will have an analgesic effect by slowing down the rate of nerve transmission so that pain impulses less reach the brain and pain perception will decrease.

The Effect of Deep Back Massage and Warm Compresses on Labor Pain in the First Active Phase at Akhmad Berahim Hospital, Tana Tidung Regency

To find out whether there is an effect of deep back massage and warm compresses on labor pain during the first active phase in pregnant women using SPSS software with the Wilcoxon Sign Rank test

Based on the discussion above, it can be seen that there is a decrease in labor pain before and after the intervention of deep back massage and warm compresses, the results of P value = 0.000 < 0.05 which means that there is an effect of deep back mass intervention and warm compresses on labor pain during the first active phase. The impact of the deep back massage method is to increase the release of endorphins, in addition to reducing pain, it can also increase the action of oxytocin in helping myometrium contractions in the opening process. In the respondents who were given the deep back massage method, emphasis was placed on the sacrum at the beginning of the contraction. Emphasis can be done with clenched hands like tennis balls on sacrum 2,3,4. Ask the mother to take a deep breath and then exhale gently (Utari et al 2022).

Applying a warm compress to the area of the body that feels pain will send a signal to the hypothalamus through the spinal cord. When heat-sensitive receptors in the hypothalamus are stimulated then the effector system emits a signal that initiates sweating and peripheral vasodilation. Changes in the size of blood vessels are regulated by the vasomotor center in the medulla oblongata of the brain stalk, under the influence of the anterior hypothalamus so that vasodilation occurs. Heat will stimulate nerve fibers that close the gate so that the transmission of pain impulses to the spinal medulla and to the brain is induced (Soeparno et al., 2020).

The results of the above study show that the deep back massage method is effective in reducing labor pain with the action of 3 massages on the mother's back during contractions. Therefore, the researcher assumes that it is very well applied to mothers who give birth with a more frequent

massage frequency during contractions by birth companions such as husbands where the closeness of emotional relationships will be more established so that mothers feel more attention and affection to face the labor process.

This is in line with the research of Nurulicha (2019) The results of the study show that there is an effect before and after Deep Back Massage on the level of pain in pregnant women during the first active phase (opening 4-7 cm). Many factors affect pain during childbirth where the pain felt is a physiological mechanism and is subjective according to what the individual feels. Adaptation to pain must be passed by the mother during the first phase of childbirth. The age of the mother during childbirth is one of the factors that affect pain (Anita, et al 2022).

According to the researchers' assumption of a warm compress applied to the mother's lower back in the area where the fetal head presses against the spine, the heat effect transmitted through the warm compress can reduce pain by improving blood circulation, reducing muscle stiffness so that the mother can feel comfortable and helping to reduce pain at the onset of labor

CONCLUSION

Based on the discussion above, it can be seen that there is an intervention effect of deep back mass and warm compresses on labor pain in the first active phase. The impact of the deep back massage method is to increase the release of endorphins, in addition to reducing pain, it can also increase the action of oxytocin in helping the myometrium contract in the opening process.

The results of the study showed that the deep back massage method was effective in reducing labor pain with the action of 3 massages on the mother's back during contractions. Whereas a warm compress is applied to the mother's lower back in an area where the fetal head presses against the spine, the heat effect transmitted through the warm compress can reduce pain by increasing blood circulation, reducing muscle stiffness so that the mother can feel comfortable and helping to reduce pain at the beginning of labor

SUGGESTION

For health workers in hospitals or independent practice places, you can use deep back massage techniques and warm compresses to help reduce labor pain during the 1st active phase

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