

The Effect of Acupressure on Pain Levels Kala I in Maternity Mothers

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ABSTRACT

Most of the mothers who gave birth stated that they could not stand the pain that was felt, especially in the abdomen, waist, back and spread to the spine, so that the mother continued to feel pain during the first stage of labor. Contractions during labor can cause pain. Labor pain can cause stress that causes excessive release of hormones such as catecholamines and steroids. One method of reducing pain without drugs that can be given continuously, is cost-effective, and has a low risk, namely acupressure. Objective: To determine the effectiveness of acupressure therapy on reducing labor pain in the active phase of the first stage. This research is a Quasi Experimental Design with a One Group Pre-Post Test Design approach. The population in this study were all birth mothers who checked their pregnancies. The sampling technique was carried out by accidental sampling and a sample of 20 respondents was obtained. Collecting data by observing the acupressure treatment with the Numerical Rating Scale (NRS). Univariate analysis using frequency distribution and bivariate analysis using paired t test. The results of the study mean labor pain before being given acupressure was 6.48 and after being given acupressure was 3.84. There was an effect of acupressure techniques on active phase I labor pain (p-value 0.0001 <0.05) with a decrease of 2.64. Acupressure therapy can be applied to midwifery care for mothers in the first stage of labor which aims to reduce labor pain

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1. INTRODUCTION

Labor pain occurs due to contractions of the uterine muscles, hypoxia of the contracting muscles, cervical stretching, uterine corpus ischemia, and stretching of the lower uterine segment. Through the thoracic spinal nerve segments 11-12 and lower thoracic accessory nerves and upper lumbar sympathetic nerves, pain receptors are transmitted [1]. If labor pain is not treated, it can cause an increase in maternal cardiac output and obstruction in the peripheral blood vessels, causing decreased uteroplacental perfusion [2].

The first stage of labor is the beginning of true labor contractions, which are marked by progressive cervical changes that end with complete dilation (10 cm) in the first stage of primigravidas which lasts about 13 hours, while in multigravidas it takes about 7 hours. The progress of labor during the first stage of the active phase is the most tiring, tough time, and most mothers start to feel aches or pains. In this phase, most mothers feel severe pain because uterine activity begins to be more active [3].

According to Hakimi 2010, after the diagnosis of signs of labor has been established, it means that pain has done its job in stimulating contractions, so birth attendants can reduce the pain felt by birthing mothers. Efforts to reduce pain that can be given continuously, are cost-effective, low-risk, can help speed up labor are non-pharmacological methods or support techniques without drugs [4]. While in Satria's 2017 study, concerning "The Effects of Before and After Performing Back Massage with Counter Pressure Techniques on Reducing Maternal Pain in the 1st Phase of Active Phase" it was found that Counter Pressure can also reduce pain in mothers in the 1st stage of labour [5].

One of the non-pharmacological techniques that can reduce labor pain is acupressure. This technique can be used as an alternative to reduce pain levels without causing adverse effects. Acupressure is done at points that are believed to manage labor pain by stimulating local production of

endorphins, which are painkillers that are naturally produced in the body. These substances can trigger a calming and uplifting response in the body, have a positive effect on emotions, can cause relaxation and normalize body functions [6].

Acupressure is a very simple action, easy to do, has minimal side effects, and the application of the principle of healing touch in acupressure shows caring behavior that can bring the therapeutic relationship closer to nurses and patients (Mehta, 2007). Acupressure techniques as a non-pharmacological method are expected to help midwives in preparing mothers and families for childbirth so that the needs of mothers during labor to have a pleasant experience with minimal pain can be fulfilled. Based on the background above, the researcher was interested in knowing the effect of acupressure on pain intensity and duration of the first stage of labour. In this study, specifically, the effect of acupressure on labor pain would be identified [7].

2. METHOD

This research is a Quasi Experimental Design using the One Group Pre-Post Test Design approach. This design was developed to overcome difficulties in determining the control group in research. Before being given treatment, the group was given a pretest (first stage of data collection), then the group was given treatment/experimentation, and then a posttest was carried out. The study was conducted on mothers in labor in the first stage. Respondents in this study were all mothers in labor who had entered labor and met the inclusion criteria, a total of 25 respondents who were obtained using an accidental sampling technique. The variable in this study was the effect of acupressure on the first stage of labor pain. The management of acupressure was carried out by pressing 15 times with a duration of 60 seconds for each pressure, and pausing for 10-60 seconds. So that the total duration for each point is about 30 minutes, and 60 minutes. Collecting data by observing the acupressure treatment with the Numerical Rating Scale (NRS). Univariate analysis using frequency distribution and bivariate analysis using paired t test.

3. RESULTS AND DISCUSSION

Table 1. Frequency Distribution of Respondents Based on Mother's Age, Parity and Birth Attendant

Karakteristik Responden	Frekuensi	Persentase (%)
Age :		
19-35 th	19	76%
>35 th	6	24%
Paritas:		
Primipara	12	48%
Multipara	13	52%
Companion		
Husband	16	64%
Family	9	36%

Based on table 1, it is known that there were 19 respondents (76%) with ages 19-35 years and 6 respondents (24%) aged >35 years (24%). Respondents with primipara parity were 12 respondents (48%) and 13 respondents with multipara (52%). Distribution of Respondents Based on Accompaniment shows that in the delivery process, mothers giving birth are accompanied by companions, namely 16 respondents (64%) accompanied by husbands, 9 respondents (36%) accompanied by mothers, and accompanied by other families

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Table 2 Frequency of Labor Pain Before and After Given Acupressure

Variabel	Frekuensi	Persentase
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Kategori			
Labor Pain Before given Acupressure	No	0	0
	Light	0	0
	Currently	13	55%
	Heavy	11	45%
	Pain is unbearable	0	0
25		100%	
Labor After being given acupressure	No	0	0
	Light	10	40%
	Currently	15	60%
	Heavy	0	0
	Pain is unbearable	0	0
Total		25	100%

Based on table 2, the results show that the frequency of labor pain before being given the acupressure technique in the severe category was 13 respondents (55%) and in the moderate category there were 11 respondents (45%). After being given the acupressure technique, the frequency of labor pain in the Severe category was no longer found, and changed to the Moderate category of 15 respondents (60%) and the Mild category of 10 respondents (40%).

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Bivariate analysis in this study was conducted to determine the effect of acupressure on reducing the intensity of pain in the first stage of labor in independent midwives.

Tabel 3 Independent T-Test

	Mean	SD	Mean dDifference	T	Sig(2-tailed)	df	N
Pre Test	6.48	1.358					
Post Test	3.84	1.179	2,64	16.289	0.0001	24	25

Table 3 explains that the average pain felt by mothers in labor before being given acupressure intervention was on a scale of 6.48 or included in the Moderate Pain category, where objectively the subjects (respondents) hissed, grinned, could indicate the location of pain, could describe pain, and followed orders. well. Table 3 also shows that the average birth pain after being given acupressure intervention is on a scale of 3.84 or in the Mild Pain category, where objectively the subjects (respondents) are still able to communicate well.

The number of respondents used as the research sample (N) was 25. For the Standard Deviation value in the pre test it was 1,358 and the post test was 1,179. The results in the table also show that the average post test is 3.84 which is less than the average pre test is 6.48, so descriptively there is a difference/decrease in labor pain. The mean difference / level of pain reduction is 2.64 on average. Table 3 shows whether or not there is an effect of acupressure on reducing the intensity of labor pain. The hypothesis is accepted if $t \text{ count} > t \text{ table}$ or $\text{significance} < 0.05$. The hypothesis is rejected if $t \text{ count} < t \text{ table}$ or $\text{significance} > 0.05$.

Based on the table above, the calculated t value is 16,289. To find the t table value based on the df value and the significance value ($\alpha/2$). From the table above the df value is 24 and the significance value is 0.025. Based on the distribution of t table values, a t table value of 2.0639 was found. Thus, because the value of t count is $16.289 > \text{from } t \text{ table } 2.0639$, the hypothesis is accepted. So it can be concluded that there is an effect of acupressure on labor pain, where the average reduction in pain is 2.640 with a significance value of $0.0001 < 0.05$.

Average Labor Pain Before Acupressure Is Performed

Acupressure starts from nerve stimulation with a small diameter in the muscles that will send impulses to the spinal cord, then it is passed on to three nerve centers, spinal cord, mesencephalon, hypothalamus-pituitary complex, all three of which are activated to release neurotransmitters (endorphins) which block pain messages that come next through the other pain [8]. Endorphins are a natural supply of the body in the form of substances such as morphine, activated by stress and pain, localized in the brain, spinal cord and digestive tract, providing an analgesic effect when these agents combine with opiate receptors in the brain [9]. Based on research results, the average pain felt by mothers in labor before being given acupressure intervention was on a scale of 6.48 or included in the Moderate Pain category, where objectively the subjects (respondents) hissed, grinned, could indicate the location of pain, could describe pain, and followed orders well. The results of this study are in line with research by Ririn Ariyanti (2019) that out of 30 respondents, the average pain scale of the treatment group before the intervention was 6.87, with a standard deviation of 0.915. With a confidence level of 95%, the pain scale of the respondents in the treatment group before the intervention was carried out was estimated to range from 6.36 to 7.37. This increased perception of pain is due to the fact that labor has entered an active phase (maximum dilatation phase) with an opening of the cervix 5-6 cm. Opening of the cervix is the process of enlarging the cervical opening from a tightly closed state into a hole large enough to allow passage of the fetal head. In this phase, the contractions of the uterus become longer and the intensity is stronger, during the contractions blood vessels constrict which causes anoxia of the muscle fibers, this will cause painful stimulation besides that due to pressure on the nerve endings when the uterus contracts. Flattening of the cervix in the active phase due to increasingly strong contractions, will cause the walls of the corpus uteri which consist of muscles to become thicker and shorter, while the lower part of the uterus and cervix contain only a little muscle and contain lots of collagen tissue which will easily be stretched until they become thin and Opening this condition will cause the pain to increase. This pain is called visceral pain (in the internal organs) stimulation of pain receptors in the abdominal cavity due to muscle spasm, ischemia and tissue stretching [10].

The feeling of pain in labor is highly subjective about the physical sensations associated with uterine contractions, cervical dilatation and effacement, and lowering of the head during labour. Differences in the perception of pain felt by mothers in labor during the active phase I occur because of the different abilities of individuals in responding to and perceiving the pain they experience. The ability to respond and perceive pain is influenced by many factors such as age, gender, meaning of pain, attention, previous experience, coping style, family support, fear and anxiety, personality, fatigue, culture and society.(7)

Average Labor Pain After Acupressure Is Done

Based on the results of the study, it was shown that the average pain for women in labor after being given acupressure intervention was on a scale of 3.84 or included in the Mild Pain category, where objectively the subjects (respondents) were still able to communicate well. The number of respondents used as the research sample (N) was 25. For the Standard Deviation value in the pre test it was 1,358 and the post test was 1,179. Std. Value The mean error for the pre test is 0.272 and the post test is 0.236. The results of this study are in line with research.

Ririn Ariyanti (2019) The average pain scale in the treatment group after the intervention of acupressure therapy was performed on the mother-in-law of PMB Ratri Restuni was known to have a scale of 4.37 with a standard deviation of 1.163. Stimulating and gently massaging the acupressure points for 1 minute on the hand between the thumb and forefinger can cause the release of endorphins. The term endorphins is a combination of the two words endogeneity and morphine, when the body secretes these substances one effect is pain relief. Endorphins are thought to be able to inhibit pain impulses by blocking the transmission of impulses in the brain and spinal cord [9]. Labor pain felt by respondents during the first stage of labor decreased, labor pain that was not handled vigorously had harmful effects beyond the discomfort it caused, the effects that arise This will affect the delivery process in addition to worsening the condition of the mother and fetus, reducing pain after giving acupressure therapy will help respondents reduce the discomfort felt due to labor pain [7]. Statement of

Lee, Chang & Kang, (2001) which states that acupressure in LI4 point in general can stimulate the release of endorphins in the blood so that pain during labor can be controlled. Acupressure can also stimulate the release of oxytocin from the pituitary gland, which directly stimulates uterine contractions. In addition, acupressure stimulation according to the gate control theory results in the opposite message that is stronger, faster and travels along the small gelatinous nerve fibers and then blocks the pain message so that the brain does not record the pain message [4][11].

The Effect of Acupressure on the Intensity of Labor Pain

Based on the results of the study, the t value for respondents was 16,289 with a p-value of 0.0001. p-value is smaller than the value of α (0.05), this indicates that H_0 is rejected. This means that there is a significant difference between the pain scale before and after the intervention for the respondents, there is a significant difference between the pain scale before and after the intervention for the respondents. Thus, it can be concluded that acupressure therapy has a significant effect on labor pain experienced by respondents. The results showed that there was a significant difference between the average pain scales. Before the acupressure therapy intervention, the average pain scale for respondents was 6.48. After the acupressure therapy intervention, the average pain scale for respondents decreased to 3.84. Thereby also when statistical tests were carried out using the dependent t test, it was found that the t value for the treatment group was 16,289 with a p-value of 0.0001. It can be seen that the p-value is smaller than the value of α (0.05), this indicates that H_0 is rejected. This means that there is a significant difference between the scales pain before and after intervention in respondents. The results of this study are in line with the results of Yusrita's research (2020) that there are significant differences in the group of respondents who were given the intervention, so that acupressure is effective in reducing labor pain. Acupressure in different cervical dilatations causes a decrease in the intensity of labor pain. Acupressure can reduce labor pain. Acupressure of these points can activate and increase the production of endorphins so that pain is [12].

Activity in the large and small nerve fibers influences the sensation of pain. Pain impulses travel through small diameter fibers. It is these nerve fibers that gate shut on impulses through these tiny fibers. Acupressure is done by stimulating acupuncture points at points on the surface of the skin which contain large diameter sensory nerve fibers and blood vessels that help close the gates on the transmission of impulses causing pain thereby reducing or eliminating pain [5].

The mechanism of action of acupressure is by stimulating the nervous system, improving blood circulation, activating and increasing the work of endorphins. Massage and pressure on acupressure points will stimulate $A\beta$ nerve cells in the skin or type 1 nerve cells in muscles which are large diameter myelinated nerve cells that carry tactile or sensory messages. Giving stimulation of acupressure points can activate sensory nerve receptors. These impulses will be forwarded to the spinal cord, then the misensifalon with the pituitary-hypothalamus complex, all three of which are activated to release endorphins that can suppress labor pain. This endorphin hormone is a pain reliever hormone that is produced naturally from within the body. Endorphin hormones will come out if a person is happy and calm. Management of acupressure is done by pressing 15 times with a duration of 60 seconds each pressing, and pausing for 10-60 seconds. So that the total duration for each point is about 30 minutes, and 60 minutes [13].

Arini Dwi Nularsih's research (2015) showed that there was a significant effect of the acupressure method on the intensity of contractions in women giving birth when I, where the more acupressure methods are used, the intensity of the contractions increases. Intervention of acupressure therapy in the diagnosis of pain is one of the non-pharmacological intervention techniques, namely the distraction technique [14]. According to Okta Vitriani's research results (2017) in her journal entitled "The Effect of Acupressure Therapy on the Intensity of Labor Pain in Mothers in the First Active Stage of Labor at the Sedindingan Health Center in 2017" acupressure therapy has an effect on pain levels in active first stage labor patients [15].

4. CONCLUSION

The results of the study mean labor pain before being given acupressure was 6.48 and after being given acupressure was 3.84. There was an effect of acupressure techniques on active phase I labor pain (p-value 0.0001 <0.05) with a decrease of 2.64. Acupressure therapy can be applied to midwifery care for mothers in the first stage of labor which aims to reduce labor pain.

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