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## The Effect of Endorphin Massage on the Adaptation of Labor Pain in the Active Phase I of Inpartu Mothers at Polindes Larasati (Sekardadi Village, Jenu District, Tuban Regency)

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### ABSTRACT

The process of childbirth is identical to the onset of pain. The most dominant pain is felt especially in the active phase of the first stage of labor. The 1st stage of labor is the beginning of labor contractions characterized by progressive cervical changes ending with complete dilatation (10 cm). One of the problems that occur in first stage labor pain is caused by uterine contractions that cause cervical dilation and thinning. Through endorphine massage, which is a touch technique or light massage given to pregnant women before delivery that can normalize heart rate, blood pressure, and can increase the relaxed condition in the body of pregnant women by triggering a feeling of comfort through the skin surface so that by doing the massage for 20 minutes, then the pain in labor will be reduced. This study uses a quantitative research method with a static group comparison design. Measurements were made in the treatment group that was given an endorphine massage for 20 minutes in the active phase. The population in this study were all inpartu mothers who gave birth at Polindes Larasati. This research was conducted in Sekardadi Village, Jenu District, Tuban Regency. The sample in this study were some of the pregnant women who met the inclusion criteria as many as 14 respondents. McNemar statistical test results obtained  $p$  value = 0.031 ( $\alpha < 0.05$ ), thus there is an effect of endorphine massage on the adaptation of labor pain in the active phase of the first stage of inpartum mothers. From the results of the study, it was concluded that there was an effect of endorphine massage on pain adaptation because endorphine massage can stimulate the body to release endorphins which are pain relievers. It is hoped that health workers can provide health education about endorphine massage to the community so that later it is hoped that all people will be able to apply endorphine massage to overcome pain in labor.

**Keywords:** endorphine massage; pain adaptation

### INTRODUCTION

Labor and birth are normal physiological events. Labor is a process of expelling the products of conception (fetus and uri), which can live from the uterus through the vagina to the outside world (Wiknjastro, 2005). The labor process is identical to the pain that will be experienced, labor pain can cause excessive stress such as catecholamines from steroids. This hormone can cause smooth muscle tension and vasoconstriction of blood vessels. This can lead to a decrease in uterine contractions, decreased circulation, uteroplacental, reduced blood flow and oxygen to the uterus, and the onset of uterine ischemia which makes pain impulses increase (Sumarah, 2009).

According to the theory of Rosemary Mander (2004), the most dominant pain is felt during labor, especially during the 1st stage of labor. Labor pain in the first stage is a physiological process caused by cervical dilatation, uterine muscle hypoxia during contraction, corpus ischemia and stretching of the lower uterine segment and nerve compression in the cervix (Bandiyah, 2009).

Data from the Health Office of Tuban Regency in 2012, the number of patients with normal deliveries was recorded as 11407 people. While survey data obtained from the Larasati Polindes in Sekardadi Village, the number of patients with normal deliveries in 2017 every month was 15. And the results of observations in December 2017, from 5 mothers who gave birth at the Larasati Polindes, Sekardadi village through interviews and saw that The results of parturition mothers, especially in primiparas, feel severe pain in the first stage of labor in the active phase. Inpartum mothers often feel anxious, uncomfortable, confused, worried, causing the pain to increase, even two of the five primiparous mothers observed stated that they could not stand the pain they felt. Pain during labor is a physiological thing in parturition mothers as contractions of the myometrium with different intensities in each individual, causing the mother to feel uncomfortable during labor.

Factors that affect pain during labor are hormonal factors, the influence of prostaglandins, uterine structure, uterine circulation, the influence of nerves and nutrition. And the causes of labor pain (Bobak, 2004) are uterine

muscle contractions, pelvic floor muscle strain & psychological conditions. Pain in the 1st stage of labor is caused by the appearance of uterine muscle contractions, hypoxia of the contracted muscles, cervical stretching, uterine corpus ischemia, and stretching of the lower uterine segment. Pain receptors are transmitted via the spinal nerve segment T11-12 and the accessory nerves of the lower thoracic and upper lumbar sympathetic nerves. This system runs from the periphery through the spinal cord, brain stem, thalamus, and cerebral cortex.

One way of non-pharmacological management to trigger a feeling of comfort and reduce pain during labor in parturition during the active phase of the 1st stage of labor, from the significant results listed in the journal researched by Noviyanti in 2015, is by using the endorphin massage method, namely the touch technique. as well as body massage for pregnant women before delivery which can increase the relaxed condition of the mother giving birth and trigger a feeling of comfort, because this technique can increase the release of oxytocin. So that researchers are interested in conducting research on the effect of endorphin massage, namely a touch therapy or light massage that is given to pregnant women before giving birth. Which aims to reduce pain during labor and provide a sense of comfort during labor during the first stage of the active phase at Polindes Larasati, Sekardadi village.

## METHODS

The design used in this study is static group comparison, namely research conducted by selecting two classes for research, the two classes include one experimental class group and the same control class (Syamsudin and Damayanti, 2011).

The experimental group of subjects was observed before the intervention, then observed again after the intervention. And in the control group the subjects were not observed and were not given intervention but were observed in the post test to compare the results in the experimental group.

The independent variable in this study was endorphine massage. The dependent variable in this study is pain adaptation. The population in this study were all 15 pregnant women in the Polindes of Sekardadi Village, Jenu District, Tuban Regency, Indonesia in March 2018. The sample in this study were some of the pregnant women in the Larasati Polindes, Sekardadi Village, Jenu District, Tuban Regency as many as 14 people. in March 2018 and according to the inclusion criteria. The sample was selected using a systematic random sampling technique. The instruments used in this study were SOPs and observation sheets.

Data collection in this study was carried out in the following order: 1) The researcher approached the research subject, explained the aims and objectives of the study, and gave informed consent as a sign of approval for the action to be taken by the researcher, namely the SOP Endorphin massage intervention and observing the respondent's pain adaptation. 2) The first data collection (pre-test) was carried out after the researchers got respondents who were included in the inclusion criteria. Researchers will perform an endorphin massage intervention for 20 minutes. 3) The second data collection (post-test) at the end of the study was to re-observe pain adaptation and record on the data collection sheet to determine the difference in pain adaptation before and after endorphine massage.

The steps of data processing and analysis in this study are:

- 1) Editing is the activity of selecting incoming data from data collection through data collection sheets after data is collected. This is done after all data is collected through the data collection sheet. At this stage the researcher checked all the completeness of the data filling in the data collection sheet.
- 2) Coding is marking the data obtained by the researcher from the respondents with the aim of making it easier to tabulate and analyze data. In this study, the code that needs to be given is:  
Pain Adaptation Data:
  - a. Receiving pain (score 1-3) = Code 1
  - b. Not receiving pain (score 4-8) = code 2
- 3) Scoring is the stage that is carried out after the answer code or observation results have been determined so that the respondent's answers or observations can be scored. Then the research was conducted by comparing the results of the pre-test and post-test
- 4) Tabulating is a step to enter data based on the results of data mining in the field. This is done after editing, scoring, and coding are done. Then the data is entered into the tabulation table for further data analysis.
- 5) Test statistics

In this study the Mc Nemar test. The conclusion drawn according to the purpose of this study was to determine the adaptation of labor pain before and after endorphine massage at Polindes Larasati, Sekardadi Village, Jenu District, Tuban.

## RESULTS

Adaptation of labor pain during the active phase I in parturition women who were not given treatment will be described in table 1.

Table 1. Distribution of respondents based on adaptation to labor pain during the active phase of the first stage in the control group at Polindes Larasati, Sekardadi Village, in March-April 2018

N o	Pain adaptation	Frequency	Percentage
1.	Receiving pain	6	85.7
2	Not receiving pain	1	14.3
Total		7	100

Based on the data in table 1, it can be concluded that almost all inpartum mothers (85.7%) have adaptation to maternal pain in terms of receiving pain.

Adaptation of labor pain during the active phase I in parturition women who were not given treatment will be described in table 1.

Table 2. Distribution of respondents based on adaptation to labor pain during the active phase of the first stage in the treatment group at Polindes Larasati, Sekardadi Village, in March-April 2018

N o	Pain adaptation	Frequency	Percentage
1.	Receiving pain	7	100
2	Not receiving pain	0	0
Total		7	100

Based on the data in table 2, it can be concluded that all inpartum mothers (100%) have adaptation to maternal pain in terms of receiving pain.

Table 3. Cross table of the effect of endorphine massage on the adaptation of labor pain in the active phase I at Polindes Larasati, Sekardadi Village in March-April 2018

		Adaptasi Nyeri	
		Receiving pain	Not receiving pain
Endorphine massage	Done	7 (100%)	0 (0%)
	Not done	6 (87.5%)	1 (14.3%)
Total		13 (92.9%)	1 (7.1%)

From the data in table 3, it can be concluded that the respondents who received endorphine massage treatment entirely (100%) received pain and those who did not receive endorphin massage treatment a small part (14.3) did not receive pain.

## DISCUSSION

### Adaptation of Labor Pain during Active Phase I in Control Group at Polindes Larasati

From the results of research at the Larasati Polindes in March-April, it can be concluded that almost all parturition mothers receive pain and a small proportion are not receiving pain.

The most dominant pain felt during labor, especially during the first stage of labor. Physiologically, labor pain begins to arise during the first stage of the latent phase and the active phase. The onset of pain is caused by uterine contractions, hypoxia of the contracting muscles, stretching of the cervix, ischemia of the uterine corpus, and stretching of the lower uterine segment which causes cervical dilatation and effacement. Pain in labor is pain from uterine contractions which can lead to increased activity of the sympathetic nervous system, changes in blood pressure, heart rate, breathing with skin color and if not treated immediately will increase worry, tension, fear, and stress (Mulyani, 2010).

Factors that affect pain during labor are hormonal factors, the influence of prostaglandins, uterine structure, uterine circulation, the influence of nerves and nutrition. And the causes of labor pain are uterine muscle contractions, pelvic floor muscle strain & psychological conditions (Bobak, 2004).

Inpartum mothers at Polindes Larasati in the control group with parity primigravida felt severe pain in the active phase of the first stage of labor, inpartum mothers often felt anxious, uncomfortable, confused, worried, causing increased pain, even mothers with primigravida stated that they could not stand pain. that is felt.

Of the 7 respondents in the control group, a small part did not experience changes in pain adaptation to receive pain due to several factors including the parity of the respondents, respondents with primigravida parity would experience very severe pain because they did not have previous childbirth experience so it would affect the response to pain. Other factors include psychological factors, mothers give birth themselves without birth attendants, mothers give birth are afraid of things they don't know about giving birth, mothers give birth constantly think about pain, stress, anxiety, tension, anxiety and excessive fear, because the mother with parity Primigravida will feel excessive fear and anxiety that will affect the response to pain.

### **Adaptation of Active Phase I Labor Pain in the Experimental Group at Polindes Larasati**

From the results of research at the Larasati Polindes in March-April, it can be concluded that the adaptation of labor pain in inpartu mothers who received endorphine massage treatment from 7 respondents can be concluded that all of them are receiving pain.

During the first stage of labor pain, the active phase occurs when the cervix is dilated between 3-4 cm. The active phase is a term that describes the fastest rate of dilatation, consistently starting when the cervix is dilated from 3 cm to 4 cm or more, with uterine contractions, reflecting the active phase. One way of non-pharmacological management to adapt to pain during labor is by means of the endorphin massage method, namely touch techniques and body massage of pregnant women before delivery which can improve the relaxed condition of mothers in labor and trigger feelings of comfort and adaptation to pain, because this technique can improve release of oxytocin substances (Constance Palinsky theory).

Inpartum mothers in the treatment group at Polindes Larasati after being given endorphin massage treatment were all able to adapt to pain. So this can cause parturition mothers to feel comfortable during childbirth. And comfort during labor can create and facilitate the reaction, response, and psychic of the mother in labor and control her labor pain.

Of the 7 respondents who experienced changes in pain adaptation after endorphine massage treatment, it was caused by many factors, one of which was that respondents followed the researcher's instructions well, could be cooperative so that researchers could perform endorphine massage treatment according to existing SOPs. And other factors, namely from a psychological point of view, when women undergo childbirth accompanied by the closest people, especially husbands, feelings of fear, tension, anxiety, and anxiety in facing childbirth will disappear so that they can control pain during childbirth and can adapt to pain. So there is a change that initially the respondent did not adapt to pain to adapt to pain.

### **The Effect of Endorphin Massage on the Adaptation of Labor Pain in Active Phase I at Polindes Larasati**

Analysis of the data used in this study is the McNemar test with a significance level of 0.05. The results of statistical tests using McNemar obtained p value = 0.031 (p value <0.05). This shows that there is an effect of endorphine massage on the adaptation of labor pain in the first stage of the active phase at the Larasati Polindes, Sekardadi Village in 2018.

From table 5.6, it can be seen that the data obtained from 7 respondents who received endorphine massage treatment were all receiving pain. And of the 7 respondents who were not treated, a small part did not receive pain.

Pain in labor is pain from uterine contractions which can lead to increased activity of the sympathetic nervous system, changes in blood pressure, heart rate, breathing with skin color and if not treated immediately will increase worry, tension, fear, and stress (Mulyani, 2010). Pain in the 1st stage of labor is caused by the appearance of uterine muscle contractions, hypoxia of the contracted muscles, cervical stretching, uterine corpus ischemia, and stretching of the lower uterine segment. And the factors that influence pain during labor are hormonal factors, the influence of prostaglandins, uterine structure, uterine circulation, the influence of nerves and nutrition. And the causes of labor pain are uterine muscle contractions, pelvic floor muscle strain & psychological conditions (Bobak, 2004).

One way of non-pharmacological management to adapt to pain during labor is by means of the endorphin massage method, namely touch techniques and body massage of pregnant women before delivery which can

improve the relaxed condition of mothers in labor and trigger feelings of comfort and adaptation to pain, because this technique can improve release of oxytocin substances (Constance Palinsky theory).

So that researchers are interested in conducting research on the effect of endorphin massage, namely a touch therapy or light massage that is given to pregnant women before giving birth. Which aims to reduce pain during labor, adapt to pain, and provide a sense of comfort during labor during the first stage of the active phase.

The results of this study are in accordance with the results of research conducted by Noviyanti (2016) with the title "The Effect of Massage Therapy on Reduction of Labor Pain in Active Phase I in Maternal Maternity (Case Study In Bandung City)". Based on the results of calculations using SPSS found a p-value of  $0.000 < 0.05$ , which means that there is an effect of endorphine massage on labor pain in the first stage of the active phase.

## CONCLUSION

From the results of this study it can be concluded that:

1. A small proportion of respondents in the control group at Polindes Larasati, Sekardadi Village, did not receive pain.
2. All respondents in the experimental group at Polindes Larasati, Sekardadi Village, received pain.
3. The effect of endorphine massage on the adaptation of active phase I labor pain at Polindes Larasati, Sekardadi village in 2018 was obtained, there was an effect of endorphin massage on the adaptation of active phase I labor pain in parturition mothers.

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