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The Effect of Endorphin Massage on Pain Intensity in the First Stage of the Active Phase of Labor at BPM Husniyati and BPM Yuhana Palembang

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A B S T R A C T

Pain in labor is a subjective experience of physical sensations associated with uterine contractions, cervical dilation and effacement, and fetal descent during labor. To determine the effect of endorphin massage on pain intensity during the first active phase of labor at BPM Husniyati and BPM Yuhana Palembang This research uses a pre-experimental research method, with the design used is one group pre-test post-test. In this design, there was no control group, but an assessment was carried out before and after treatment was given. In this study, mothers in labor underwent pain measurements before and after being given endorphin massage to reduce labor pain. The results of the difference in pain were seen to see whether there was a decrease in labor pain before and after giving endorphin massage. This research was conducted at BPM Husniyati and BPM Yuhana Palembang in February-June 2018. The sampling technique in this study was purposive sampling, where sampling was based on criteria. The sample taken in this study consisted of 30 respondents who were taken based on the number of mothers giving birth who met the inclusion criteria. research result for data before endorphin massage. Meanwhile, for the data after endorphin massage, the p value = 0.011. Because the p value <0.05, it can be concluded that the data distribution is not normal and further analysis uses the Wicoxon test. Conclusion The proportion of respondents who experienced severe pain intensity (7-9) before endorphin massage was 19 respondents (63.4%).

INTRODUCTION

Childbirth is synonymous with pain, so some pregnant women who are about to give birth feel afraid and anxious about facing a normal birth. In fact, it could be that the process they face will not be as they feared. It could be that her pain threshold is higher than other mothers, so she will feel normal pain and not like in their scary imagination (Aditya, 2016: 160). Pain is a condition where a person experiences discomfort, pain, or an unpleasant feeling which is subjective because the feeling of pain is different for each person in terms of scale or level, and only that person can explain and evaluate the pain experienced (Scientific, 2015: 98).

Labor pain is always something scary for pregnant women. The onset of pain during pregnancy and childbirth is a sign that the pregnant woman in question is soon entering the labor stage. However, actually pain is very individual and can be caused by the physical condition and culture of the pregnant woman concerned (Kuswandi, 2014: 17).Pain in labor is a subjective experience of physical sensations associated with uterine contractions, cervical dilation and effacement, and fetal descent during labor. The physiological response to pain is an increase in blood pressure, pulse, breathing, sweat, pupil diameter, and muscle tension (Scientific, 2015: 98).

Physiologically, labor pain begins with the appearance of uterine contractions in the first stage of labor, the latent phase and the first stage of the active phase. The latent phase occurs when the cervix opens around 0 to 3 cm, and the active phase opens from 4 cm to 10 cm (Kuswandi, 2014: 18).Labor pain or pain when giving birth occurs due to contractions of the uterine muscles when pushing the baby out of the uterus. These uterine muscle contractions are automatic, originating from the pacemaker. The nature of these contractions is tetanic and local to maintain cell and intrauterine tone. Pain during labor is a manifestation of contractions (shortening) of the uterine muscles which cause pain in the waist, abdominal area and radiates to the thighs. Meanwhile, the effects caused by contractions can include nausea, dizziness, headaches, vomiting, body tremors, hot and cold, cramps, aches and muscle pain (Putra, 2016: 14-15).

Factors that influence labor pain are internal and external factors which include age, intensity and duration of uterine contractions, size of the fetus and general condition of the patient, size of the fetus or narrow birth canal, as well as fatigue and lack of sleep (Scientific, 2015-100). During the stages of labor, various kinds of discomfort and labor pain are felt by the mother who is about to give birth. As health workers, midwives play a role in monitoring closely and providing support and comfort to the mother, both emotionally and physically, such as accompanying the mother to make her feel comfortable and providing mental support to reduce the mother's anxiety/fear (Walyani and Endang, 2016: 69).

In general, to deal with pain during labor, pharmacological methods and non-pharmacological methods are used. Pharmacological methods can include administering analgesic and anesthetic drugs, while non-pharmacological methods can include alternatives, namely massage or light touch, aromatherapy, hypnosis, auditory techniques, relaxation, homeopathy, yoga and stretching (Putra, 2016: 51-85). Endorphin massage is a light touch and massage technique which is very important for pregnant women who are approaching delivery, because this method helps to provide a feeling of calm and comfort, both before and during the birth process (Kuswandi, 2014: 53).

Endorphins have long been known as substances that have many benefits, including reducing persistent pain and aches, regulating the production of growth and sex hormones, controlling feelings of stress, and improving the human immune system (Kuswandi, 2014: 54).

According to Constance Palinsky, who conducted research on pain management, she was moved to use endorphin massage to reduce or relieve pain in mothers who were about to give birth. He created endorphin massage, a light touch and massage technique that normalizes heart rate and blood pressure, and increases the relaxed condition in the body of pregnant women by triggering feelings of comfort through the surface of the skin (Kuswandi, 2014: 54).

Based on the results of Antik et al's research in 2017 on 30 respondents from mothers giving birth, it was found that the pain scale during the first stage of labor before being given endorphin massage treatment was that 5 respondents (16.67%) experienced very severe pain, 13 respondents (43.33%) experienced severe pain, 11 respondents (36.67%) experienced moderate pain, and one respondent (3.33%) experienced mild pain. The pain scale for the first stage of labor after being given endorphin massage treatment showed that no more respondents experienced very severe pain, 6 respondents (20%) experienced severe pain, 13 respondents (43.3%) experienced moderate pain, and 11 respondents (36.7%) experienced %) experienced mild pain. These data show the influence of endorphin massage on the pain intensity scale during the first active phase of labor (Antik, 2017: 2-3).

"Based on the above background and the research that has been successfully carried out, I am interested in providing innovation in midwifery care entitled the effect of endorphin massage on pain intensity during the first active phase of labor at BPM Husniyati and BPM Yuhana Palembang in 2018."

METHODOLOGY

This research uses a pre-experimental research method, with the design used is one group pre-test post-test. In this design, there was no control group, but an assessment was carried out before and after treatment was given. In this study, mothers in labor underwent pain measurements before and after being given endorphin massage to reduce labor pain. The results of the difference in pain were seen to see whether there was a decrease in labor pain before and after giving endorphin massage. This research was conducted at BPM Husniyati and BPM Yuhana Palembang in February-June 2018. The sampling technique in this study was purposive sampling, where sampling was based on criteria. As previously known, the sample size for simple experimental research using treatment groups is 30-500 samples. The sample taken in this study consisted of 30 respondents who were taken based on the number of mothers giving birth who met the inclusion criteria.

RESEARCH RESULT

General Description of Research Respondents

The number of respondents to this study was 30 mothers in the active phase of the first stage of labor who experienced labor pain who were given endorphin massage (treatment group). These respondents were obtained from mothers giving birth during the first active phase of labor at BPM Husniyati and BPM Yuhana who had met the inclusion and exclusion criteria determined in this study.

Table 4.1
Frequency Distribution of Respondents Based on Maternal Age
Stage I Active Phase at BPM Husniyati and BPM Yuhana in 2018

No.	Age	Amount	Percentage (%)
one.	<20 Years	6	20
two	21-25 Years	20	66,7
three	26-30 Years	3	9,9
four	31-35 Years	1	3,3
	Total	**30**	**100**

Based on table 4.1, it is known that of the 30 respondents, the majority of birthing mothers were aged 21-25 years, amounting to 20 respondents (20.0%).

Table 4.2
Frequency Distribution of Respondents Based on Maternal Education
Stage I Active Phase at BPM Husniyati and BPM Yuhana in 2018

No.	Education	Amount	Percentage (%)
one.	Elementary School	3	10,0
Two	Junior High School	3	10,0
Three	Senior High School	20	66,7
Four	S1	4	13,3
	Total	**30**	**100**

Based on table 4.2, it can be seen that of the 30 respondents who gave birth during the first active phase, most of them had a high school education, totaling 20 people (66.7%).

Table 4.3
Frequency Distribution of Respondents Based on Maternal Occupation Stage I Active Phase at BPM Husniyati and BPM Yuhana in 2018

No.	Work	Amount	Percentage (%)
one.	Work	3	10,0
Two	Doesn't work	27	90,0
	Total	**30**	**100**

Based on table 4.3, most of the 30 respondents who gave birth during the first active phase did not work or were only housewives, 27 people (90%).

Univariate Analysis

Univariate analysis was carried out to determine the frequency and percentage distribution of all research variables. The data is displayed in tabular form which can be seen in the table below.

a. Pain intensity before and after administration of endorphin massage

In this study, the NRS scale (Numeric Rating Scale) was divided into 5 categories, namely no pain (0), mild pain (1-3), moderate pain (4-6), severe pain (7-9), very severe pain. (10). The frequency distribution table is as follows.

Table 4.4
Frequency Distribution of Respondents Based on Pain Intensity Before and After Giving Endorphin Massage in the First Stage of the Active Phase of Labor at BPM Husniyati and BPM Yuhana in 2018

No.	Pain Intensity Labor	Before		After	
		Frequency	Percentage (%)	Frequency	Percentage (%)
one.	1-3	0	0	5	16,7
Two	4-6	11	36,7	20	66,8
Three	7-9	19	63,4	5	16,7
	Amount	30	100	30	100

Based on table 4.4 above, it can be seen that of the 30 respondents before having endorphin massage at BPM Husniyati and BPM Yuhana, most of them experienced severe pain (7-9), namely 19 respondents (63.4%). After being given endorphin massage, the majority of mothers experiencing moderate pain (4-6), namely 20 respondents (66.8%).

Bivariate Analysis

The next test was bivariate analysis, the aim was to determine whether or not there was an effect of giving endorphin massage on pain intensity during the first stage of the active phase of labor at BPM Husniyati and BPM Yuhana before and after giving endorphin massage. The results of the bivariate analysis can be seen in the table below.

a. Normality Test Results Using Shapiro Wilk

The results of the normality test using Shapiro Wilk can be seen in the table below.

Table 4.5 Results of Data Analysis Using Shapiro Wilk Before and After Endorphin Massage at BPM Husniyati and BPM Yuhana Palembang in 2018

Data Type	statistic	df	P
Before doing endorphin massage	0,929	30	0,045
After doing an endorphin massage	0,905	30	0,011

Based on table 4.5, the results of the normality test obtained a p value = 0.045 for the data before the endorphin massage was carried out. Meanwhile, for the data after endorphin massage, the p value = 0.011. Because the p value <0.05, it can be concluded that the data distribution is not normal and further analysis uses the Wicoxon test.

a. Data Analysis Results Using Wilcoxon

The results of data analysis using Wilcoxon can be seen in the table below.

Table 4.6 Results of Data Analysis Using Wilcoxon Before and After Endorphin Massage on Maternity Women at BPM Husniyati and BPM Yuhana Palembang in 2018

	N	Median (Minimum-Maksimum)	P
Before doing endorphin massage	30	7 (4-9)	0,000
After doing an endorphin massage	30	5 (3-7)	

Based on table 4.6 above, p = 0.000 (p < 0.05), meaning that statistically there is an effect before and after endorphin massage.

The Wilcoxon test results showed that H0 was rejected, meaning that there was an influence of endorphin massage on the intensity of pain during the first active phase of labor at BPM Husniyati and BPM Yuhana Palembang in 2018.

DISCUSSION

1. Respondent Characteristics

Based on the research results, it is stated that the general description of research respondents at BPM Husniyati and BPM Yuhana Palembang in 2018 was 30 respondents who were a group of mothers giving birth during the first active phase who were given endorphin massage. This is in accordance with the opinion of Sugiyono (2016: 91), for simple experimental research using treatment groups of 30-500 samples.

From the results of the frequency distribution of respondents based on age, it is known that of the 30 respondents, the majority of mothers in labor were aged 24 and 25 years, each amounting to 6 respondents (20.0%). The results of this research, seen from the average age of respondents, show that the age group is relatively safe for giving birth.

According to Dewi, (2016) the age above 20 years and under 35 years is the right age for women's reproduction to work optimally. The same thing was also explained by Kumala in Wulandari, et al (2016) that this age is physically ideal for marriage and pregnancy because at this age the function of women's reproductive organs is still optimal.

From the results of the frequency distribution of respondents based on education, it was found that the majority of mothers in BPM Husniyati and BPM Yuhana Palembang in 2018 had at least a high school education with a total of 20 people (66.7%). This shows that the majority have gone beyond basic education. According to Wulandari, et al (2016), the level of education generally influences a person's ability to receive information about conditions and the surrounding environment, thus influencing the perspective and choice of coping in solving problems. Education is one of the factors that influences knowledge. The respondent's education influences the respondent's knowledge because the higher the respondent's education level, the easier it is for the respondent to receive new information.

From the results of the frequency distribution of respondents based on occupation, it was found that the majority of mothers who gave birth at BPM Husniyati and BPM Yuhana in 2018 were not working or only as housewives, 27 people (90%). According to Wahyuni S in Wulandari, et al (2016) stated that the level of work is not a direct variable that can influence the level of pain, but work causes the effect of fatigue which will increase a person's perception of the pain they experience and reduce their coping ability, because they cannot focus on it. The relaxation provided is expected to reduce pain.

2. Univariate Analysis

Based on univariate analysis before the endorphin massage intervention was carried out, the results showed that the majority of mothers experiencing severe pain (7-9) were 19 respondents (63.4%). Physiologically, the cause of pain according to Andarmoyo and Suharti (2015: 50) is because at that time the uterine muscles lengthen and then shorten. The cervix also softens, thins and becomes flat, then retracts and the fetal head presses on the cervix at that time, then opens it, causing pain in the mother who is about to give birth.

According to Scientific (2015, 98) pain is a condition where a person experiences unpleasant feelings. It is subjective because the feeling of pain is different for each person in terms of scale or level and only that person can explain and evaluate the pain they experience.

Pain during the first stage of the active phase of labor is caused by contractions of the uterine muscles, hypoxia from the contracting muscles, stretching of the cervix when it opens, ischemia of the uterine corpus, and stretching of the lower uterine segment. During the first stage, uterine contractions cause cervical dilatation and uterine ischemia. Pain impulses during the first stage are transmitted by the spinal nerve segments and the lumbar sympathetic lower thoracic accessories. This nerve originates from the uterus and cervix. Discomfort from cervical changes and uterine ischemia is when visceral pain located below the abdomen spreads to the back lumbar area and inner thighs. Usually, women feel pain only during contractions and are free from pain during relaxation. Local pain such as a cramping sensation, tearing sensation and burning sensation, is caused by distension and laceration of the cervix, vagina and perineal tissue. During the active phase, the cervix dilates (Bobak, 2004 in research by Noviyanti et al., 2016).

Based on univariate analysis after endorphin massage, the results showed that there was a decrease in the intensity of pain in respondents after endorphin massage at BPM Husniyati and BPM Yuhana in 2018, namely that the majority of mothers experiencing moderate pain (4-6), namely 20 respondents (66.8%). Endorphin massage is a massage aimed at increasing endorphins in the body using a light touch method so that it can provide a feeling of comfort for the mother who is about to give birth (Putra, 2016: 154).

This research was carried out by providing intervention to pregnant women during the first active phase by using endorphin massage for 20 minutes on the neck, back and legs to reduce pain. This is in accordance with the opinion of Danuatmaja and Meiliasari (2004) in research by Noviyanti, et al (2016) that mothers who are massaged for 20 minutes every hour during labor will be freer from pain. Gentle massage helps the mother feel fresher, more relaxed and comfortable during labor and can make the mother feel closer to the people who care for her. The touch of someone who cares and wants to help is a source of strength when a mother is sick, tired and afraid.

The benefits of endorphin massage are regulating the production of growth and sex hormones, controlling persistent pain, controlling feelings of frustration and stress, and improving the immune system, so that endorphins in the body can be triggered through various activities such as deep breathing and relaxation.

as well as meditation that can be done by pregnant and giving birth mothers (Aprilia, 2017: 79).

3. Bivariate Analysis

The next test was bivariate analysis, the aim was to determine whether there was an effect of giving endorphin massage on the intensity of pain during the first stage of labor at BPM Husniyati and BPM Yuhana before and after giving endorphin massage using SPSS software version 22.0 with the Wilcoxon Signed Rank Test.

Based on the results of the Wilcoxon test, a significance value of p = 0.000 was obtained, because the p value < 0.05, meaning that statistically there was an effect of endorphin massage on reducing the intensity of pain during the first active phase of labor.

The pain scale of respondents before massage showed that 19 (63.4%) respondents had complaints of severe pain and 11 (36.7%) respondents had complaints of moderate pain. Most of the pain scales that respondents complained about before the intervention was experiencing severe pain.

The pain scale of respondents after endorphin massage showed a decrease in the scale of pain felt by respondents, with the majority of respondents showing a decrease in the pain scale to severe 5 (16.7%) respondents, moderate pain namely 20 (66.8%) respondents, and mild pain as many as 5 (16.7%) respondents. This shows that endorphin massage has a positive effect on reducing the labor pain scale.

This is in line with the results of research conducted by Noviyanti et al regarding the effect of massage therapy on reducing labor pain in the first active phase of labor in mothers giving birth. It has a significant effect on the level of maternal pain in the first active phase of labor with p value = 0.000 (p < 0 .05).

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of research conducted on the effect of endorphin massage on reducing pain intensity in the first stage of the active phase of labor at BPM Husniyati and BPM Yuhana Palembang in 2018, it can be concluded that: The proportion of respondents who experienced severe pain intensity (7-9) before endorphin massage was 19 respondents (63.4%). The proportion of respondents who experienced moderate pain intensity (4-6) after endorphin massage was 20 respondents (66.8%). Based on the Wilcoxon test, a significance value of p = 0.000 (p<0.05) was obtained, meaning that statistically there was an effect before and after endorphin massage.

It is hoped that the results of this research can be developed and increase knowledge about one of the endorphin massage techniques on pain intensity during the first stage of labor and can be used as a basis for further research. It is hoped that health workers, especially health workers in the work areas of BPM Husniyati and BPM Yuhana, can apply endorphin massage in providing midwifery care services to mothers in labor to reduce the intensity of pain during the first active phase of labor.

ADVANCED RESEARCH

It is hoped that in the future it can be used as a data source for further research and it is hoped that further research can expand the research population, namely by increasing the number of respondents with pain during the first active phase of labor.

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REFERENCES

Aditya, Nana. 2016. Happy Pregnancy A Fun Pregnancy & Childbirth Guide. Yogyakarta: Stiletto Book.

Andarmoyo, Sulistyo and Suharti. 2015. Childbirth Without Excessive Pain. Yogyakarta: Ar-Ruzz Media.

Aprila, Yesie. 2017. Fear-Free Pregnancy and Childbirth Practical Guide to Childbirth that is Comfortable and Minimally Traumatic. Jakarta: PT Gramedia Pustaka Utama.

Digilib Unimus. Chapter II Literature Review. http://digilib.unimus.ac.id/files/disk1/121/jtptunimus-gdl-iinuraziz-6014-2-babii.pdf. Accessed on 01 December 2017.

Scientific, Widia Shofa. 2015. Textbook of Normal Childbirth Care. Yogyakarta: Selemba Medika.

Johariyah and Ema Wahyu Ningrum. 2012. Textbook of Midwifery Care for Childbirth & Newborns. Jakarta: CV. TransInfo Media.

Judha, et al. 2012. Pain Measurement Theory and Childbirth Pain. Yogyakarta: Nuha Medika.

Kuswandari, R.P. 2016. "CHAPTER III Research Methodology". (http://repository.umy.ac.id/bitstream/handle/123456789/5841/7.%20BAB%20III.pdf?sequence=7&isAllowed=y). Accessed December 20, 2017.

Kuswandi, Lanny. 2014. The Miracle of Hypnobirthing. Jakarta: Pustaka Bunda, Puspa Swara Group IKAPI Member.

Lammarisi, Erlysita, et al. 2015. Nursing and Midwifery Clinical Handbook. Yogyakarta: Bhafana Publishing.

Lockhart Anita and Lyndon Saputra. 2014. Midwifery Care during Physiological and Pathological Childbirth. South Tangerang: Binarupa Aksara Publisher.

Manuaba, 2010. Obstetrics, Gynecological Diseases and Family Planning. Jakarta: EGC.

Notoatmodjo, Soekidjo. 2013. Health Research Methodology. Jakarta: Rineka Cipta.

Noviyanti, et al. 2016. The Effect of Massage Therapy on Reducing Labor Pain in the Active Phase of First Stage in Laboring Mothers (Case Study in Bandung City). http://journal-aipkind.or.id./index.php/SEAJoM/article/download/216/31/. Accessed June 20, 2018.

Son, Sitiatava Rizema. 2016. Easy Ways to Give Birth with Hypnobirthing. Yogyakarta: Execute.

Saryono and Mekar. 2013. Qualitative and Quantitative Research Methodology in the Health Sector. Yogyakarta: Nuha Medika.

Sofian, Amru. 2013. Rustam Mochtar Synopsis of Obstetrics: Obstetric Physiology, Obstetric Pathology, Ed. 3, Volume 1. Jakarta: EGC Medical Books.

Sugiyono. 2016. Quantitative, Qualitative and R&D Research Methodologies. Bandung: Alphabeta.

Sulastri, Mother Ucu. 2015. Golden Touch Parenting. South Jakarta: Adistar Zaytuna Ufuk Abadi.

Sulistyawati, Ari and Esti Nugraheny. 2012. Midwifery Care for Birthing Women. Jakarta: Salemba Medika.

Tando, Naomi Marie. 2013. Midwifery Care for Childbirth and Newborns. Jakarta: Publisher in Media.

Walyani, Elisabeth Siwi and Endang Purwoastuti. Childbirth and Newborn Care. Yogyakarta: Pustakabarupress.

Wikipedia. Vocational Degree. http://id.m.wikipedia.org/wiki/Gelar_vokasi. Accessed January 8, 2018.

Yongki, et al. 2012. Growth Care in Pregnancy, Childbirth, Neonates, Infants and Toddlers. Yogyakarta: Nuha Medika.