Knowledge E
Engaging minds

Conference Paper

The Effect of Endorphin Message Technique Towards the Decrease of Pain at the First Childbirth in BPM and Society Health Center Palembang

Adys Azelea, Elita Vasra, and A. Kadir

Midwifery Major, Poltekkes Depkes Palembang, Indonesia

Corresponding Author:
Elita Vasra
fikaaam.anakmama@gmail.com

Abstract

One of the treatments for Pregnant Women that is still not widely known, is Endorphin Massage. The aim of the study was to determine the effect of endorphin massage on the first stage of childbirth. The design of quasi-experimental research are with pre and post-test designs. This research was conducted at BPM Husniyati Plaju, and Gandus Society Health Center, Palembang. The population in this research were all normal maternal mothers at BPM Husniyati Plaju Palembang in 2016. The samples are 20 people. The research result showed before the intervention, the respondent's pain scale was mild pain 8 (40%), medium 12 (60%) and after intervention the respondent pain scale was mild pain 19 (95%) and severe pain 1 (5%). The childbirth pain intensity before p value = 0.117 and pain intensity after p value = 0.429, there was no effect of endorphin massage on the pain intensity in the first stage of normal childbirth, the results of T test showed 7.483 with p-value = 0,000 (p value $<\alpha$ 0.05) there was a significant difference in Endorphin massage intervention. The childbirth pain intensity before p value = 0.117 and pain intensity after p value = 0.429, there was no effect of endorphin massage on the intensity of first stage pain but the T test results showed 7.483 (p value $<\alpha$ 0.05) there were significant differences in Endorphin massage intervention.

Keywords: Endorphin massage, pain, childbirth

1. Introduction

In the first time of childbirth, uterine contraction causes cervix dilation and push the fetus through the birth canal. The pain is caused by ischemic uterine muscles, pelvic floor muscles and parineum [1]. By the increase of both volume and frequency of the uterus, the pain that is felt can be stronger, the peak of the pain occurs in the active phase, where the complete opening is up to 10 cm and lasts about 4.6 hours for primipara and 2,4 hours for multiparas. One of the treatments for Pregnant Women that is still not widely known, is Endorphin Massage. The aim of the study was to determine the effect of endorphin massage on the first stage of childbirth. This research limited the masoma

endorphin and pain reduction, the research object was the trimester pregnant women that focusing on the first stage of chilbirth in BPM Husniyati Plaju Palembang in 2016.

2. Research Method

This research is an experimental research design with quasi-experiments that is directed at research, not only describe it but has analyzed the relation between variables [2]. Quasi-experiments are defined as experimental experiments. In this case the researcher wanted to know the relation of endorphin massage towards the pain reduction at the first stage of childbirth in BPM Husniyati Plaju Palembang. The population in this study were all normal mothers in BPM Husniyati Plaju Palembang in 2016.

The conceptual framework is a framework of relation between concepts or variables that will be observed or measured through the research that will be conducted [3]. The conceptual framework is a conceptual model that related to how a researcher constructs a theory or logically connects several factors that are considered as important for the problem. The variable that will be examined by the authors is endorphin massage affects the pain reduction in the first stage of childbirth, where the location of the research will be conducted in BPM Husniyati Plaju Palembang in 2016.
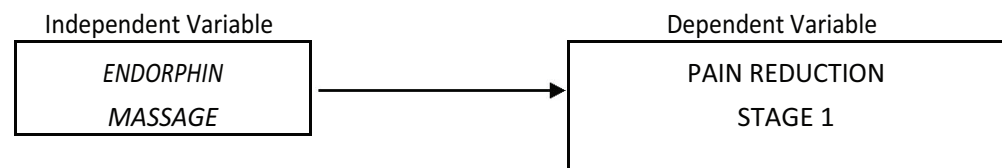

Figure 1: Conceptual Framework.

3. Definition of Key Terms

Table 1:

No	Variable	Definition	Measuring Method	Measuring Instrument	Measurement Result	Measuring Scale
1	Endorphin Massage	Technique and interventions of mild massage touches, which helps to give calm and comfortable feeling.	Intervention	Checklist	Improve relaxed condition of the pregnant women body by triggering comfortable feeling through the skin surface.	Ordinal

No	Variable	Definition	Measuring Method	Measuring Instrument	Measurement Result	Measuring Scale
2	Pain reduction at the first stage of childbirth	Endorphin produced by human body used for eliminate the pain.	Intervention	Questionnaire	VAS values between 0-3 cm are considered as low pain, VAS values ≥4 cm considered as almost severe	Ordinal
3	Characteristics					
	1. Age	The lenght of life until the data collection is done	Interview	Questionnaire	1. Old, 18-25 2. Young, 25-35	Ordinal
	2. Education	Formal Education Level that you have completed	Interview	Questionnaire	1. High, > SHS 2. Low, < SHS	Ordinal
	3. Work	All activities both inside and outside that produce salary	Interview	Questionnaire	1. Employeed 2. Unemployeed	Ordinal
	4. Parity	The number of children you gave birth to both alive and dead	Interview	Questionnaire	1. High, > 2 2. Low < 2	Ordinal

4. Results

4.1. Univariate analysis characteristic

TABLE 2: Respondent Distribution by Age in BPM and Society Health Center Palembang City in 2016.

No	Age	F	%
1	Old	4	20.0
2	Young	16	80.0
	Total	**20**	**100.0**

Based on table 2 above it can be seen that from 20 respondent that included in old category are 4 people (20%) young category are 16 people (80%)

TABLE 3: Respondent Distribution by Education in BPM and Society Heath Center in 2016.

No	Education	Frequency	Percentage
1.	High	12	60
2.	Low	8	40
	Total	**20**	**100**

It can bee seen from the table above that, most of the respondents with high education, 12 respondent (60%) with low education, 8 respondents (40%).

TABLE 4: Respondent Distribution through the Work in BPM and Society Health Center Palembang City in 2016.

No	Occupation	Frequency	Percentage
1.	Employed	4	20
2.	Unemployed	16	80
	Total	**20**	**100**

It can bee seen from the table above that, most of the respondents are unemployeed, 16 respondents (80%) employeed, 4 respondent (20%)

TABLE 5: Respondent Distribution according to Parity in BPM and Society Health Center Palembang City in 2016.

No	Parity	Frequency	Percentage
1.	High	8	40
2.	Low	12	60
	Total	**20**	**100**

It can be seen from the table above that, high parities are 8 respondents (40%) and low parities are 5 respondents (25%)

TABLE 6: Frequency Distribution of Pain Intensity during the first stage of Childbirth Before and After Intervention in BPM and Society Health Center Palembang City in 2016.

The Intensity of Pain	Before		After	
	f	%	f	%
1. No Pain	0	0	0	0
2. Mild	8	40	19	95
3. Moderate	12	60	1	5
4. Severe	0	0	0	0
5. Very Severe	0	0	0	0
Total	**20**	**100**	**20**	**100**

It can be seen from the table above that before the pain intervention scale are mild pain, 8 people (40%) and medium, 12 people (60%).

4.2. Bivariate analysis

TABLE 7: The Effect of Endorphin Massage on Pain Intensity in the First Stage of Normal Childbirth in BPM and Society Health Center Palembang City in 2016.

The Intensity of Labor Pain	N	Mean	SD	SE	P-Value	T-Test
Before	20	6,50	1,539	0,344	0,117	7,483
After	20	3,70	1,418	0,317	0,429	(p-value = 0,000)

Based on the table 5, It can be known that the pain intensity of childbirth before p value = 0,117 and pain intensity after p value = 0,429, it shows that there is no effect of endorphin massage towards the pain intensity at the first stage of childbirth but the T-test shows 7,483 with p-value = 0,000 p value <α 0,05) there is significant difference of endorphin massage intervention in resisting the pain at the first stage of childbirth.

5. Discussion

5.1. Age

The results showed that from 20 respondents who are inluded in old category are 4 people (20%) and young category are 16 people (80%).

The age of the respondents included in healthy reproduction category. The respondents are ready to face the childbirth because the reproductive organs are ready to accept the conception. The age characteristics of the respondent can influence the perceived childbirth pain, where the younger pregnant woman is not ready to accept a pregnancy, the response will be negative. This is in accordance with the theory that stated the age has a relation of experience with a health or disease problem and decision making [3]. Someone who is older will be able to respond towards the stressors rather than someone younger.

5.2. The effect of Endorphin massage towards the pain intensity in the first stage

This research result indicate the intensity of childbirth pain before p value = 0.117 and pain intensity after p value = 0.429, this shows that there is no effect of endorphin massage towards the intensity of pain in the first stage of normal childbirth but the T-test results shows 7.483 with p-value = 0,000 (p value <α 0.05) there was a significant difference in Endorphin massage intervention towards the Pain Intensity in the first stage of childbirth.

The respondents felt that childbirth was painful and the heat spread to the backbones. In the control group although they were not given endorphine massage, it was also obtained data that respondents who experienced medium pain were 4 people (26.7%). It is possible for the mothers to be psychologically prepared to face the childbirth process so that the mothers are more confident and not afraid of facing the childbirth.

The results of the study in the treatment group, the obtained data on childbirth pain that mostly experienced mild pain were 9 people (60.0%). This shows that respondents

who were given endorphine massage can release the oxytocin so that the mothers feel calm and not afraid in facing the childbirth. Although the respondents were given endorphine massage, there were still 2 respondents (13.3%) who experienced pain.

This is possible because the perceived pain is subjective and the perception about the pain felt by respondents is different. Childbirth pain that occurs in the respondent is an unpleasant feeling which is an individual response that occurs during the childbirth process. The pain experienced by respondents is because the physiological changes from the birth canal and uterus. This result is supported by the theory that stated childbirth pain is caused by cervical dilatation, uterine muscle hypoxia during contraction, ischemia of the uterine body and stretching of lower uterine segment and nerve compression in the cervix [4].

The pain felt by respondents are varied in the control group and the treatment group. The pain that occurs because of the stress in facing the pregnancy so that it can stimulate excessive uterine contraction. Uncontrolled uterine contractions will deliver the pain during childbirth. This is in accordance with theory that stated pain depends on work of the large and small nerves that are in the root of the dorsal ganglion. Stimulation of the large nerves will increase the mechanism of substantia gelatinosa activity that causes the closure of the mechanism door so that T cell activity is inhibited and causes stimulation of delivery to be inhibited and cause stimulation of delivery to be inhibited also. Stimulation of small fibers will inhibit the substantive activity of gelatinose and open the door mechanism, so that it stimulating T cell activity which will then deliver the pain stimulation [5].

The pain cannot be measured objectively for example by X-Ray or blood tests. However, the type of pain that appears can be predicted based on the signs and symptoms. This type of pain is different everytimes. Illustration of pain scale is a more objective meaning that can be measured. The scale of pain is not only useful in assessing the severity of pain, but also can evaluate changes in client conditions [6].

Pain in the first stage childbirth is caused by the appearance of uterus muscles constructions, hypoxia of the muscles that contract, the stretching of the cervix when opening, ischemia of the uterine body, 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 spinal nerve segments and thoracic accessories under lumbar sympathy. This nerve comes from the uterus and cervix. Discomfort from cervical changes and uterine ischemia is when visceral pain located under the abdomen spreads to the back lumbar area and inner thighs. Usually, women feel the pain during contractions only and are free from the pain during relaxation. The

pain is local such as cramping sensation, tear sensation, and heat sensation, caused by distention and laceration of the cervix, vagina and perineal tissue. During the active phase, the seviks dilate [7].

The respondent's pain scale after induced endorphin massage showed a decrease in the pain scale felt by the respondents, with the majority of respondents who showed a decrease in the pain scale to medium, which is 32 (88.9%) respondents and 4 respondents with mild pain (11.1%) This shows that this massage has a positive effect on decreasing labor pain scale.

The benefits of induced endorphin massage are regulating growth hormone and sex production, controlling pain and persistent pain, controlling the feelings of stress, and increasing the immune system, so that the endorphins in the body can be triggered by various activities, such as deep breathing and relaxation, and meditation that can be done for pregnant and maternal mothers [8].

Nonfarmacological pain control methods are very important because they are not harmful for the mothers or the fetus, it does not slow the childbirth if it given strong pain control, and do not have allergic effects or drug effects. The nonpharmacology method is divided into three interacting components, thus influencing the response to pain, which is the motivational-affective strategy (the neutral interpretation of messages in the brain that is influenced by feelings, memory, experience and culture), cognitive-evaluative (interpretation of the pain message which is influenced by knowledge, attention, use of cognitive strategies and cognitive evaluation of situations) and sensory-discriminatory (notification of information to the brain according to physical sensations).

The childbirth is generally accompanied by pain caused by the uterine contractions. The intensity of pain during childbirth can affect the childbirth, and fetal well-being [9]. The childbirth pain can cause stress which causes the release of excessive hormones such as catecholamines and steroids. This hormone can cause smooth muscle tension and vasoconstriction of blood vessels. This can result in the decrease of uterine contractions, decrease uteroplacental circulation, reduction blood flow and oxygen to the uterus, and the emergence of uterine ischemia that makes the pain impulses increase.

Induced endorphin massage is one way to reduce childbirth pain. This is in accordance with the theory that stated small fibers transmit a severe sensation of pain that has receptors in the form of free nerve endings in the skin and deep structures such as tendons, muscles and internal organs. Large fibers transmit touch sensations, vibrations, warm temperatures and fine pressure [6].

6. Conclusion

1. The results of the research showed that respondents with a high education are 12 respondents (60%) with a low education are 8 respondents (40%). Unemployeed are 16 respondents (80%) while employeed are 4 respondents (20%). The respondents based on height are 8 respondents (40%) while low parity are 5 respondents (25%)

2. Before the intervention the respondents with mild pain were 8 people (40%) and medium 12 people (60%) and after the intervention the respondents with mild pain were 19 people (95%) and severe pain 1 person (5%)

3. The intensity of childbirth pain before p value = 0.117 and pain intensity after p value = 0.429, this shows that there is no effect of endorphin massage towards the pain intensity in the first stage of normal childbirth but the T-test results show 7.483 with p-value = 0,000 (p value $<\alpha$ 0.05) There was a significant difference in Endorphin massage intervention towards the pain intensity at the first stage of childbirth

References

[1] Aprilia, Yesie, S.Si.T, M.Kes & Brenda Ritchmond. 2011. *Gentle Birth*. Jakarta: Gramedia Widiasarana Indonesia.

[2] Cunningham. 2006. *Obstetri Williams*. Jakarta: EGC.

[3] Notoatmodjo,2003, *Ilmu Kesehatan Masyarakat*.Jakarta.Rineka Cipta

[4] Fraser dan Cooper. 2009. *Myles Buku Ajar Bidan*. Jakarta: EGC.

[5] Kasdu. D. 2003. *Operasi Caesar masalah dan solusinya*. Jakarta: Puspa Swara.

[6] Potter, P.A.,& Perry. A.G. 2005. *Buku ajar Fundamental Keperawatan: Konsep, Proses, dan praktik.* Terjemahan Renata Komalasari et. Al Edisi 4. Jakarta: Penerbit Buku Kedokteran EGC.

[7] Bobak, I. et al. 2005. *Keperawatan Maternitas*. Jakarta: EGC.

[8] Simkin, P dan Ruth A. 2005. *Buku Saku Persalinan*. Jakarta: EGC.

[9] Smeltzer, S dan Brenda B. 2002. *Keperawatan Medikal Bedah*. Jakarta:EGC.