

Combination of Back Massage and Lavender Aromatherapy for Pain During The Active Labour of Stage One

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ABSTRACT: Pain as a result of delivery is an inevitable process for mothers delivering her baby. Factors which affect labour pain are such as a large baby (macrosomia), Primipara and obstetric intervention. However, the most importantly is an effort to control the pain for mothers during delivery. This research aims to determine the influence of the combination of back massage and lavender aromatherapy for pain during the active labour of stage one. The method used pseudo experimentation (Quasi Experimental designs) with pre-test and post-test with control group (pre-test and Post-test with Control Group). The samples on the study of 26 mothers in the active labour of stage one. The sampling technique used purposive sampling technique which was further analysed using Wilcoxon and Mannhitney test. The results showed no difference in pain intensity before and after the intervention with p value of 0.001 while in the control group there is difference in the pain intensity before and after the intervention with p value of 0.007. There is a significant difference in pain reduction after being given the combination of back massage and lavender aromatherapy to either group of intervention or control which obtain p value of 0.040. It is recommended to perform back massage and lavender aromatherapy for pregnant women to reduce labour pain. Midwives can help reduce the pain of delivery during the active labour with the back massage and lavender aromatherapy.

KEYWORDS: active labour, back massage, delivery, pain, lavender aromatherapy.

I. INTRODUCTION

Since 2015, Indonesia has emphasized safe delivery, that is the delivery assisted by the functionary of health care facilities. Therefore, the objective of Indonesia Ministry of Health's Strategic Plan in 2015-2019 is to establish delivery in health care facilities as an indicator of maternal health efforts, replacing delivery assisted by health workers. Delivery scope in Indonesia in 2016 was amounted to 80.6%, but the number has not reached 100% [1]. Pain is not preventable, therefore mothers are encouraged to be prepared and choose method to reduce the pain experienced by the mother. However, the most important thing is on how the mother can control the pain she experiences [2].

The agency of Coalition for Improving Maternity Services (CIMS) initiated the Safe Motherhood Initiative formulating a 10-step maternal affection. The 7th point of it mentions to suggest providing maternity care in the method of relieving pain without the use of medicines. The care can be a massage and aromatherapy therapy [3]. Aromatherapy is one of the several methods of natural treatment ever since. It is now developed as a natural medicine [4]. Massage is performed to help to relax and reduce pain in the affected areas, impulse skin receptors that can relax muscles, change the temperature of the skin and can give a comfortable sense of human relations [5]. Based on research conducted by [6] it was obtained the differences intensity of pre and post-test on the group of intervention that is the pain was worse at the pre-test than post-test. On the group with intervention, the pain intensity at pre-test test is lower than post-test pain.

Preliminary study conducted at Citra Insani Maternity Hospital Semarang, Indonesia obtained 40 monthly delivery in the year 2018. After the interview on 10 pregnant mothers on 29 December, 2018, 6 people (60%) said the pain is very heavy, 2 people (20%) expressed moderate pain and 2 persons (20%) expressed mild pain. 7 people (70%) of 10 pregnant mothers stated that he did not get aromatherapy to lower the labour pain and only 4 people (40%) who

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received back massage to lower labour pain. A mother said that in order to reduce the pain, it is carried out the technique of relaxation. The general purpose of this study is to know the combination of back massage and lavender aromatherapy during the active labour of stage one.

II. RELATED WORK

Aromatherapy is the next non-pharmacological method to reduce labour pain, besides a therapy that uses essential oil fragrances. There are a lot of aromatherapy mention in [7]. One of them is lavender. Aromatherapy is able to calm yourself and the brain and stress of the mother [8]. From the research results can be concluded that all respondents of the intervention group experienced a decrease in pain. Besides, the intervention group of all respondents have suffered significant pain reduction refer to the previous studies.

A control group of 2 persons experiencing severe pain with a score range of 7-10 decreased to mild pain with a score range of 1-3. A total of 6 people experiencing severe pain with a 7-10 score range decreased to moderate pain with a 4-6 score range. A total of 2 persons experiencing severe pain with a score range of 7-10 suffered a decrease in pain levels into mild pain with a score range of 1-3. A total of 3 people experiencing severe pain just dropped some levels of pain so that the score remained in the category of severe pain and 1 person experiencing pain was still experiencing pain after the intervention. Based on these results, it can be known that the intervention group of all respondents have decreased pain levels.

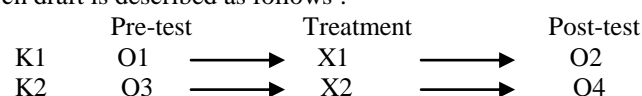
Based on research conducted by [9] about the effect of endorphin massage on the intensity of pain in the first stage of normal delivery of Primipara mothers in Bps S and B Demak in 2011 resulted in the effect of endorphin massage on the intensity of pain in the first stage of primipara maternal labour. The age of the respondents in the control group and in the intervention group was 20-35 years. Labour pain in the control group mostly experienced severe pain by 10 people (66.7%), moderate pain by 4 people (26.7%), and very severe pain by 1 person (6.7%). Delivery pain in the treatment group mostly experienced mild pain by 9 people (60.0%), moderate pain by 4 people (26.7%) and severe pain by 2 people (13.3%).

The decline in different pain levels of each respondent is influenced by the pain that is felt by the mother differently and the strength of the mother in controlling the pain is different from each other. The results of this study in line with previous research titled "The Effect of giving Lavender aromatherapy inhalation towards the decrease of physiological labour pain intensity Primipara Inpartu of the stage one in BPM "Fetty Fathiyah" Mataram City" which indicates the difference in labour pain intensity based on the universal assessment pain tool between before being given aromatherapy (pre-test) with after administered aromatherapy (post-test) [10][11]. Lavender is useful to help relieve pain, headaches, insomnia, tension and stress and can fight against fatigue [12].

III. METODOLOGY

This study used pseudo experiments (Quasi Experimental designs) with the design of pre-test and post-test with the control group (pre-test and post-test with control group) aimed at knowing the influence of combination of back massage and lavender aromatherapy on labor pain during the active phase at Citra Insani Maternity Hospital, Semarang, Indonesia.

This study involved control group in addition to intervention group. In the draft research, the experiment group was given the intervention of the back massage and lavender aromatherapy while the control group was given a back massage only. This research draft is described as follows :



Description:

K1 : The intervention group which get intervention of back massage and lavender aromatherapy.

K2 : Control group given back massage

O1 : Pain measurement before intervention of back massage and lavender aromatherapy

O2 : The measurement of pain scale after intervention of back massage and lavender aromatherapy

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- O3 : Measurement of the pain scale before back massage intervention
- O4 : Pain measurement after back massage intervention
- X1 : Treatment of intervention group performed back massage and aromatherapy Lavender
- X2 : The control group given a back massage

The sampling technique in this research was with consecutive sampling in which the sample sampling is done by selecting the sample that meets the research criteria for a certain period [13]. The number of samples in this study was 13 respondents. We use primary data, a data received from the samples directly through questionnaire and interview [14]. In this research we use delivery pain as the primary data. Analysis of data on this research will be done by normality test using Shapiro Wilk test because the number of respondents ≤ 50 . Result of normality test which obtained P value < 0.05 means the distribution is not normal. Furthermore, for the assumption of data that is not fulfilled, therefore it used hypotheses with Wilcoxon test. A comparison between the intervention group and the control group was then performed using the Mannwhitney test [15].

IV. EXPERIMENTAL RESULTS

The respondents of this study were 26 people consisting of 13 people in the intervention group and 13 people in the control group who were willing to be respondents of the study and in accordance with the inclusion criteria. The analysis used in this study is univariate analysis with frequency distribution and bivariate analysis with Willcoxon statistical test.

1. Univariat Analysis

a. Pain intensity of intervention group

Pain intensity is shown by the nurse in form of scale [16]. Each sample was asked to choose the scale of pain felt. The nurse also asks how far the pain feels most painful and how far the pain feels painless It can be seen that in before state the severe pain intensity is in 12, then it decreased in 0 person after being given the intervention. The distribution of pain in after state is in moderate and midd pain intensity.

Table 1. Pain intensity of intervention group

Pain Intensity	Before		After	
	f	%	f	%
Severe	12	92,3	0	0
Moderate	1	7,7	8	61,5
Middle	0	0	5	38,5
No pain	0	0	0	0
Total	13	100	13	100

b. Pain intensity in the control group

Table 2 shows that from 11 persons suffer from severe pain decreased into 4 persons and the distribution of pain intensity after being given the intervention of back massage only are in moderate also mild level.

Table 2. Pain intensity of the control group

Pain Intensity	Before		After	
	f	%	f	%
Severe	11	84,6	4	30,8
Moderate	2	15,4	7	53,8
Middle	0	0	2	15,4
No pain	0	0	0	0
Total	13	0	13	0

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2. Bivariate Analysis

Data normality test is done before processing data as a condition in conducting t-test. Normality test was performed the back massage and lavender aromatherapy intervention.

a. Test data normality of intervention group and control group

Data normality test was performed using the Shapiro-Wilk test because the sample is < 50 in the intervention group obtained the results of the pre-test p value (0,0001) and post-test p value (0,0001). After testing the normality of the data in the control group, then obtained pre-test p value (0,0001) and post-test p value (0,009). From these results it is known that in the treatment group it can be concluded that the control group data is not normally distributed.

Table 3. Test data normality of intervention group and control group

Test of Normality	Shapiro-Wilk		
	Statistic	Df	Sig
Pre Intervention	0,532	13	0,0001
Post-Intervention	0,392	13	0,0001
Pre-Control	0,505	13	0,0001
Post-Control	0,281	13	0,009

b. Changes in pain intensity before and after given a combination of back massage and lavender aromatherapy during the active labour of stage one

Table 4 shows the different test results in the paired groups given a combination of back massage and lavender aromatherapy using the Wilcoxon test to obtain a p value of 0.001. From these results it is known that the p value is < 0.05 so it can be seen that H_a is accepted and H_o is rejected. From these results it can be concluded that there is significant difference from the group before and after intervention of pain during the active labour of stage one.

Table 4. Changes in pain levels before and after given a combination of back massage and lavender aromatherapy

Wilcoxon Statistical Test	Pre-Post intervention
Asymp. Sig (2-tailed)	0,001

c. Changes in pain intensity before and after given back massage intervention

Table 5 shows the results of different test in paired group given back massage to get p value of 0.007. From these results it is known that the p value is < 0.05 so it can be seen that H_a is accepted H_o is rejected. From those results it can be concluded if there is significant difference from the group in state of before and after given back massage for pain during the active labour.

Table 5. Changes in pain intensity before and after given back massage

Wilcoxon Statistical Test	Pre-Post Control
Asymp. Sig (2-tailed)	0,007

d. Difference between intervention and control group

Table 6 shows the results of different tests in the unpaired group, namely the intervention group given the intervention of combination of back massage and aromatherapy with the control group given back massage. The test used Mann Whitney test and it obtains p value of 0.040. From these results it is known that the p

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value is < 0.05 so it can be seen that H_a is accepted H_o is rejected. From these results it can be concluded if there is significant difference of pain intensity in the intervention group given a combination of back massage and aromatherapy with a control group given back massage.

Table 6. Difference between intervention and control group

Post	N		Mean Rank		Sum of Rank		Sig
	Intervention	Control	Intervention	Control	Intervention	Control	
	13	13	10,77	16,23	140,0	211,0	0,040

Massage is one of the methods that can increase the intensity of endorphin. Massage can improve the circulation of the neurotransmitter that is naturally produced by the body on the neural synapse of the central nervous system. When the touch and pain are stimulated together, the sensation of touch goes to the brain while the descending control system stimulates the thalamus to secrete endorphins that shut down the conduction door of the spinal cord [17]. Back massage technique is quite effective for women who want a non-pharmacological method and minimize the side effects labour pain. There are also factors that influence labor pain, such as maternal characteristics (age, cultural background and parity) and advanced factors applying the method of back massage to the progress of labour [18].

V. CONCLUSION

The results showed no difference in pain intensity before and after intervention with the value p value 0.001 while in the control group there are differences in the pain intensity before and after with p value of 0.007. There is a significant pain decrease between intervention group and control group with p value of 0.040.

REFERENCES

- [1] Ministry of Health of Indonesia, *Health profile of Indonesia*. Jakarta: Ministry of Health Indonesia, 2017.
- [2] R. Mander, *Labor pains*. Jakarta: EGC, 2012.
- [3] N. Karlinah *et al.*, "Effect of acupressure and TENS techniques on the intensity of maternity pain at the time of active phase," *Andalas Heal. J.*, vol. 4, no. 3, pp. 943–950, 2015.
- [4] Jaelani, *Aroma therapy. 1st edn*. Jakarta: Pustaka Foundation, 2009.
- [5] D. Asrinah, *The pregnancy obstetrician*. Yogyakarta: Graha Ilmu, 2010.
- [6] B. R. Haqiqi, "Difference in the pain rate of normal labor levels between groups with and without aromatherapy lavender in Lamongan," 2016.
- [7] T. Cahyasarini, "The difference in effectiveness of inhaled aromatherapy lavender and relaxation breath in the perception of pain in the insertion of Av Shunt patients hemodialysis in RSUD Prof. Dr. Margono Soekarjo, Purwokerto," 2015.
- [8] A. Bangun and S. Nuraeni, "Cimahi, the effect of aromatherapy lavender on pain intensity in postoperative patients at hospital Dustira Cimahi," *Soedirman Nurs. J. (The Sudirman J. Nursing)*, vol. 8, no. 2, pp. 120–126, 2013.
- [9] I. N. Azizah, M. N. Wisyawati, and N. N. Anggraini, *Influence endorphin massage on pain intensity when I normal maternity mother Primipara in Bps S and B Demak year 2011*. 2011.
- [10] S. D. Karlina, S. Reksosuhodo, and A. Widayati, "The influence of lavender aromatherapy history to relieve physiological labor pain intensity in Primipara Inpartu Active Phase in BPM "Fetty Fathiyah" Mataram City," pp. 108–119.
- [11] Maslikhanah, *Application of the effleurage massage technique as an attempt to decrease childbirth pain in the mother Inpartu during the active phase*. .
- [12] Susilarini, S. Winarsih, and R. I. Idhayanti, "Pengaruh pemberian aromaterapi lavender terhadap pengendalian nyeri persalinan kala I pada ibu bersalin," *J. Kebidanan*, vol. 6, no. 12, pp. 47–54, 2017.
- [13] A. A. Hidayat, *Research methods and data analysis techniques*. Jakarta: Salemba Medika, 2014.
- [14] Muharto and Ambarita, *Research method of information systems: overcome students' difficulties in drafting research proposals*. Yogyakarta: Deepublish, 2016.
- [15] S. Arikunto, *Research procedure: A practical approach*. Jakarta: Rineka Cipta, 2013.
- [16] Potter and Perry, *Fundamentals of Nursing*. Jakarta: Salemba Medika, 2010.
- [17] Aryani, Masrul, and Evareny, "Influence of massage on the back to the intensity of pain during the latent normal delivery phase through endorphin improvement," pp. 70–77, 2015.
- [18] A. D. Puspita, "Analysis of factors affecting childbirth pain in maternity mothers at the time of the phase in Puskesmas Mergangsang," 2013.

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